



12135345-0001

Kurzanleitung

INVEOR Alpha

DE

DOC02846422-0001

Legal notice

Direktlink Betriebsanleitung

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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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Bestimmungsgemäße Verwendung

Beim Antriebsregler INVEOR Alpha handelt es sich um ein Gerät für die Drehzahlregelung von Drehstrommotoren. Vor Installation und Benutzung des INVEOR Alpha muss dieses Dokument gelesen und verstanden worden sein. Verwenden Sie den Antriebsregler grundsätzlich Bestimmungsgemäß. Das Gerät darf nur innerhalb des vorgesehenen Leistungsbereiches und unter den zulässigen Umgebungsbedingungen verwendet werden. Der Antriebsregler ist nicht zum Betrieb in explosionsgefährdeten Bereichen zugelassen. Der erlaubte Betriebsbereich, aller Komponenten, muss jederzeit eingehalten werden. Setzen Sie das Produkt ausschließlich nach den Angaben der ausführlichen Dokumentation (https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_Antriebsregler) und gemäß der vor Ort gültigen Normen und Richtlinien ein. Die in den technischen Daten gemachten Angaben sind unbedingt einzuhalten.
Bei unsachgemäßer Verwendung können Schäden am Gerät und an anderen Sachwerten entstehen. Der Antriebsregler darf nur für den vorgesehenen Verwendungszweck eingesetzt werden.

**WICHTIGE INFORMATION**

Der Einsatz von Antriebsreglern in nicht ortsfesten Ausrüstungen gilt als außergewöhnliche Umweltbedingung und ist nur nach den jeweils vor Ort gültigen Normen und Richtlinien zulässig.

- Lassen Sie die Montage und Demontage nur von entsprechend qualifiziertem Personal vornehmen.
- Setzen Sie nur Personal ein, das hinsichtlich Aufstellung, Installation, Inbetriebnahme und Bedienung geschult ist.
- Nehmen Sie keine Änderungen am Antriebsregler vor.
- Beachten Sie Allgemeine und nationale Sicherheits- und Unfallverhütungsvorschriften
- Beim INVEOR können Berührungsströme > 3,5 mA auftreten.
Bringen Sie aus diesem Grund, gemäß DIN EN 61800-5-1, einen zusätzlichen Schutzerdungsleiter mit demselben Querschnitt wie der ursprüngliche Schutzerdungsleiter an. Die Möglichkeit zum Anschluss eines zweiten Schutzerdungsleiters befindet sich an der Außenseite des Gerätes. Im Lieferumfang des INVEOR befindet sich eine zum Anschluss geeignete M6 x 8 Schraube (Drehmoment $M_A = 4,0 \text{ Nm}$).
- Beim Einsatz von 1~ INVEOR Geräten sind herkömmliche FI-Schutzschalter vom Typ A, auch RCD (residual current-operated protective device) genannt, zum Schutz vor direkter oder indirekter Berührung zugelassen!
Der FI-Schutzschalter muss, gem. DIN VDE 0160 und EN 50178 ein allstromsensitiver FI-Schutzschalter (RCD Typ B) sein!

Kennzeichnungen

Am Gehäuse des Antriebsreglers sind Schilder und Kennzeichnungen angebracht. Diese Schilder und Kennzeichnungen dürfen nicht verändert oder entfernt werden.

Symbol	Bedeutung	
	Gefahr durch Stromschlag und elektrische Entladung	
	Gefahr	
	Verbrennungsgefahr	WARNING HOT SURFACE RISK OF BURN
	Gefahr durch Stromschlag und elektrische Entladung. Nach dem Ausschalten zwei Minuten warten (Entladezeit der Kondensatoren)	
	Zusätzlicher Erdanschluss	
	Betriebsanleitung beachten und lesen	
	Typenschild mit den wichtigsten technischen Daten und Seriennummer	

1 | SICHERHEITSHINWEISE

**GEFAHR!**
LEBENSGEFAHR DURCH STROMSCHLAG UND ELEKTRISCHE ENTLADUNG!
TOD ODER SCHWERE VERLETZUNGEN
Im Antriebsregler liegen lebensgefährliche Spannungen an.
Nur eine Elektrofachkraft darf das Gerät öffnen und daran arbeiten.
Antriebsregler bei Montage, Wartung und Reparaturen immer spannungsfrei schalten und gegen Wiedereinschalten sichern.
Folgende Klemmen können auch bei Motorstillstand gefährliche Spannungen führen:

- Netzanschlussklemmen X1: L, N
- Motoranschlussklemmen X411: T1, T2, U, V, W
- Anschlussklemmen X6: Relaiskontakte

**GEFAHR!**
LEBENSGEFAHR DURCH STROMSCHLAG UND ELEKTRISCHE ENTLADUNG!
TOD ODER SCHWERE VERLETZUNGEN
Erden Sie das Gerät grundsätzlich nach DIN EN 61140; VDE 0140, NEC und sonstigen einschlägigen Normen.
Der Antriebsregler muss vorschriftsmäßig zusammen mit dem Motor geerdet werden. Andernfalls können Tod oder schwerwiegende Verletzungen die Folge sein.
Nicht genutzte offene Kabelenden im Motoranschlusskasten müssen isoliert werden.
Verwenden Sie geeignete Leitungsschutzschalter mit dem vorgeschriebenen Nennstrom zwischen Netz und Antriebsregler.
Schadhafte Teile oder Bauteile grundsätzlich nur durch Originalteile ersetzen

**Gefahr durch Stromschlag und elektrischer Entladung.**
Nach dem Ausschalten zwei Minuten warten (Entladezeit der Kondensatoren)

**VORSICHT!**
VERBRENNUNGSGEFAHR DURCH HEISSE OBERFLÄCHEN!
SCHWERE VERBRENNUNGEN DER HAUT DURCH HEISSE OBERFLÄCHEN!
Lassen Sie den Kühlkörper des Antriebsreglers ausreichend abkühlen.

**GEFAHR!**
LEBENSGEFAHR DURCH WIEDER ANLAUFENDE MOTOREN UND UMLAUFE NDE MECHANISCHE TEILE!
TOD ODER SCHWERE VERLETZUNGEN!
Das Nichtbeachten kann zum Tod, schweren Körperverletzungen oder erheblichem Sachschaden führen!
Bestimmte Parametereinstellungen und das Ändern von Parametereinstellungen während des Betriebes können bewirken, dass der Antriebsregler INVEOR nach einem Ausfall der Versorgungsspannung automatisch wieder anläuft, bzw. dass es zu unerwünschten Veränderungen des Betriebsverhaltens kommt.

Montagefläche und nähere Umgebung (nur bei Wandmontage)

Die Montagefläche und deren nähere Umgebung müssen folgende Eigenschaften aufweisen:
Ortsfest, senkrecht, eben, nicht leicht entflammbar, nicht dauerhaft vibrierend.
Die Montagefläche muss Halt für Befestigungsschrauben bieten.

Transport und Lagerung

**Sachschäden möglich**
Beschädigungsgefahr des Antriebsreglers!
Gefahr der Beschädigung des Antriebsreglers durch nicht sachgerechten Transport, Lagerung, Aufstellung und Montage!
Transportieren Sie den Antriebsregler generell sachgerecht in der Originalverpackung auf einer Palette.
Lagern Sie den Antriebsregler grundsätzlich Fachgerecht.
Lassen Sie die Aufstellung und Montage nur von qualifiziertem Personal vornehmen.

Vollständige Betriebsanleitung

Eine ausführliche Betriebsanleitung zum INVEOR Alpha Antriebsregler finden Sie im Internet unter https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_Antriebsregler.

EU-Konformitätserklärung

Die Firma KOSTAL Industrie Elektrik GmbH erklärt hiermit, dass sich die in diesem Dokument beschriebenen Antriebsregler mit den grundlegenden Anforderungen und anderen relevanten Bestimmungen der unter den genannten Richtlinien in Übereinstimmung befinden.

- Richtlinie 2014/30/EU (Elektromagnetische Verträglichkeit, EMV)
- Richtlinie 2014/35/EU (Bereitstellung elektrischer Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen auf dem Markt – kurz: Niederspannungsrichtlinie)
- Richtlinie 2011/65/EU (Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten – kurz: RoHS-Richtlinie)

Eine ausführliche EU-Konformitätserklärung finden Sie im Internet unter <http://www.kostal-industrie-elektrik.com/de-DE/Download/Antriebstechnik>

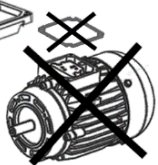
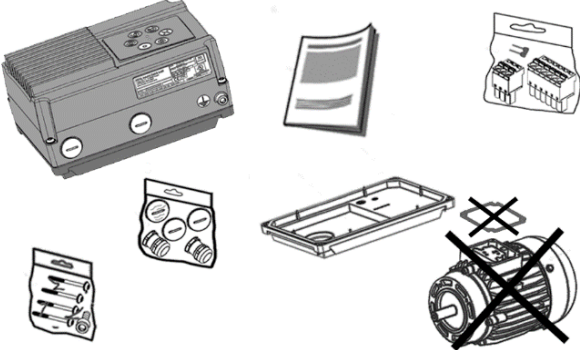
Kontakt Daten und Service

Bei technischen Fragen, wenden Sie sich bitte an unsere Service Hotline.

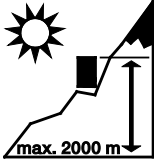
Land	Telefon	E-mail
Deutschland und andere Länder	+49 (0)2331 80 40-848	INVEOR-service@kostal.com

2 | INSTALLATION

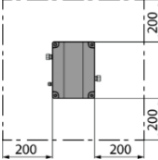
Lieferumfang



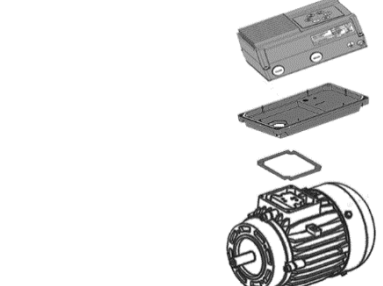
Montageort

**max. 2000 m**
- 10...+ 40 °C
- 14...104 °F
1~

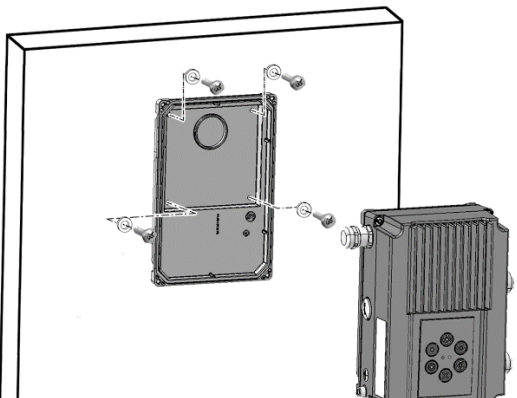
**≤ 96 %**

**200**
200
200

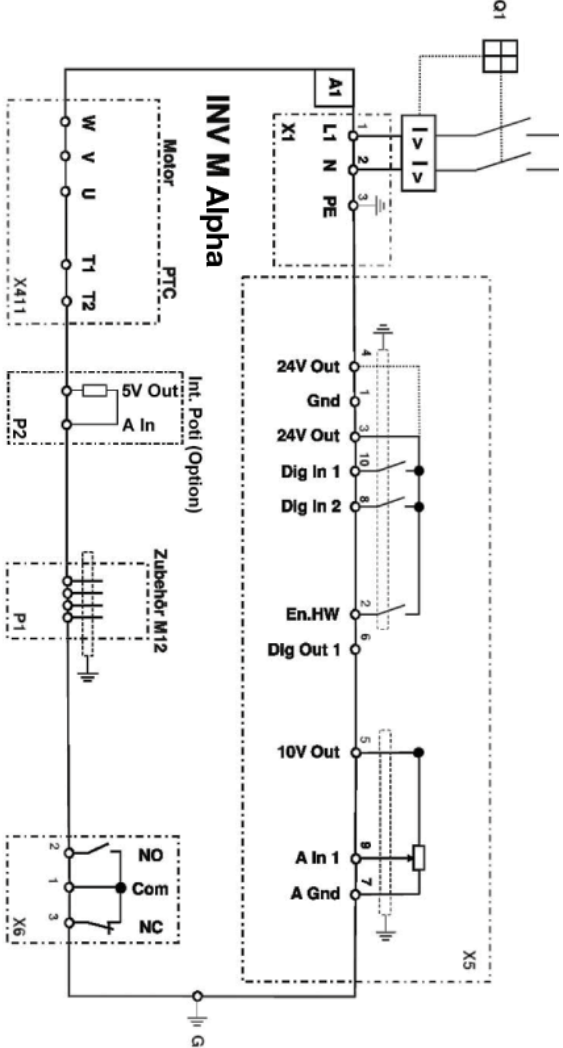
Antriebsregler montieren



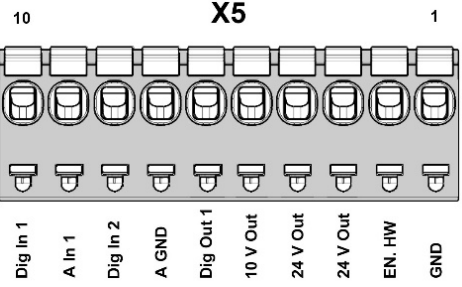
Wandmontage Baugröße Alpha



Anschlussplan

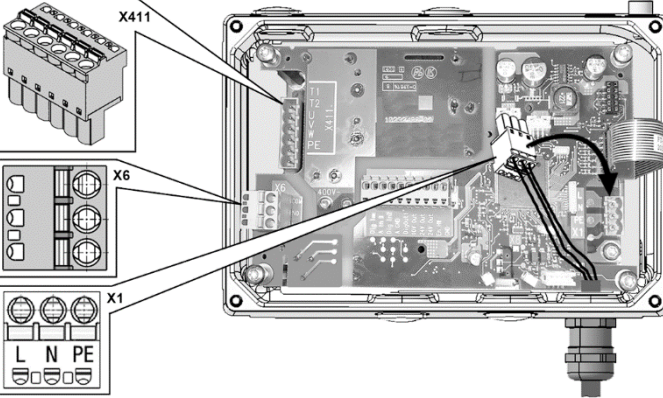


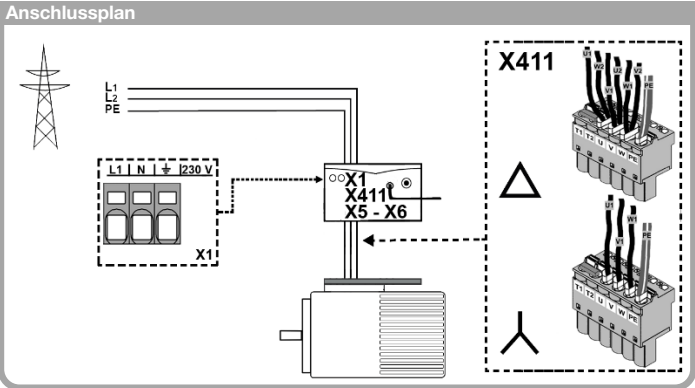
Steueranschlüsse



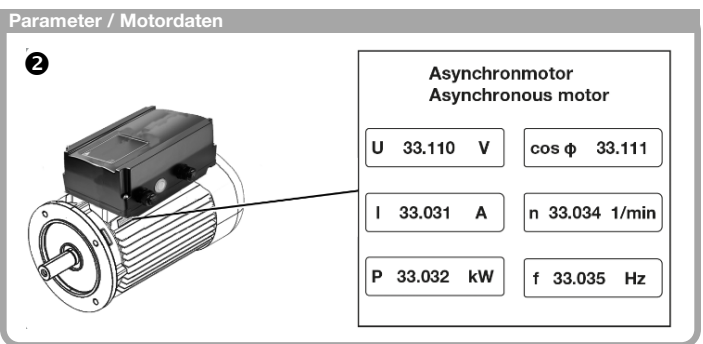
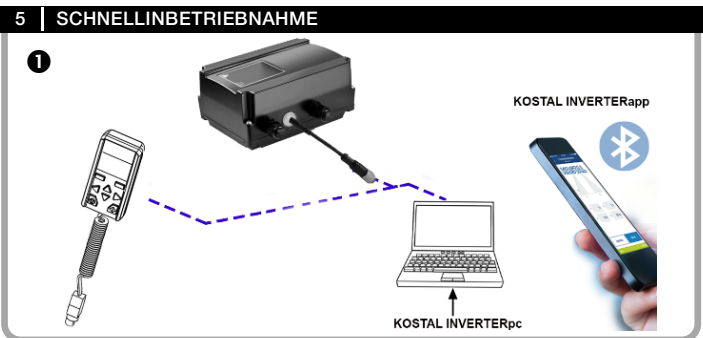
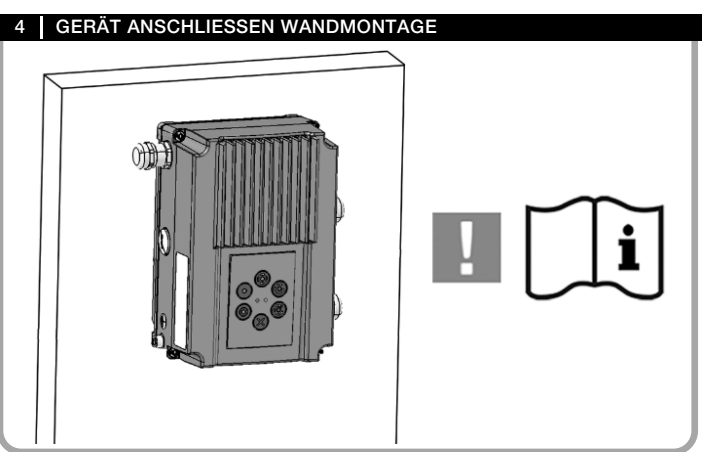
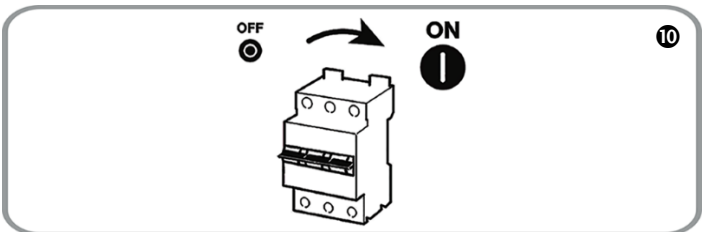
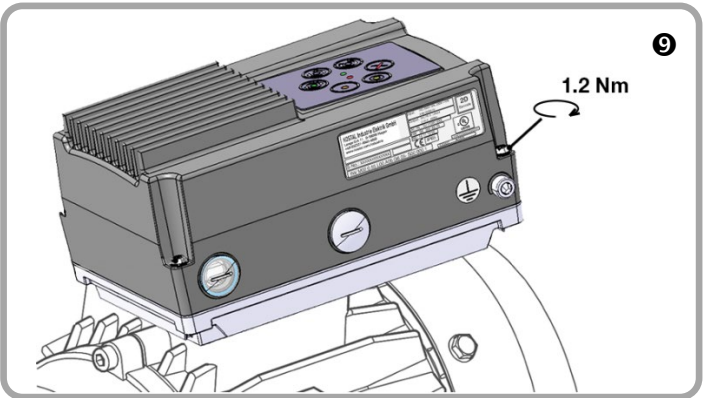
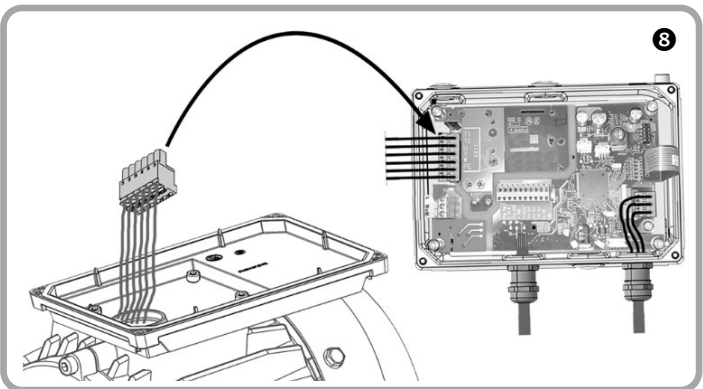
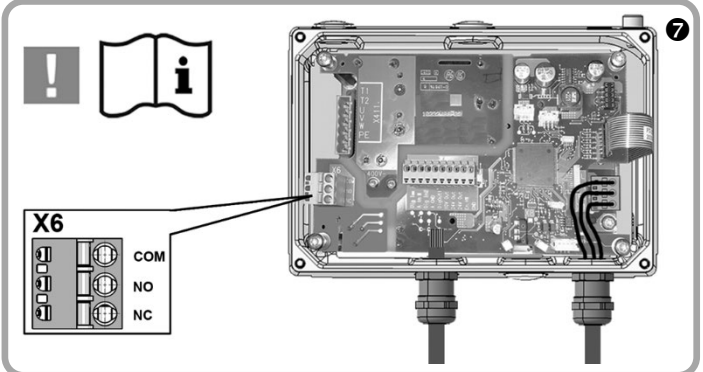
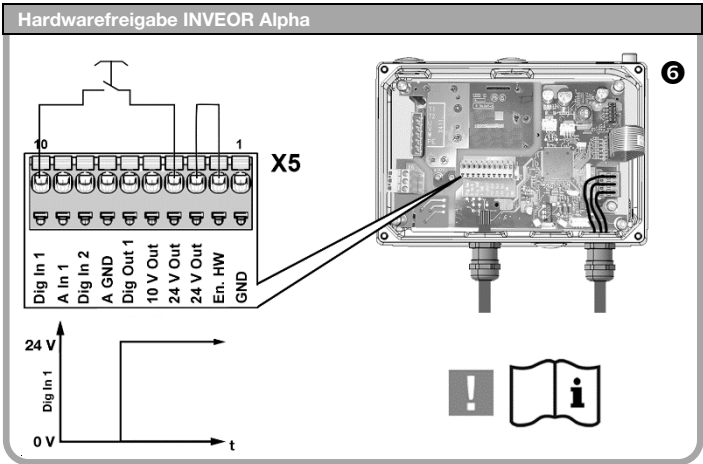
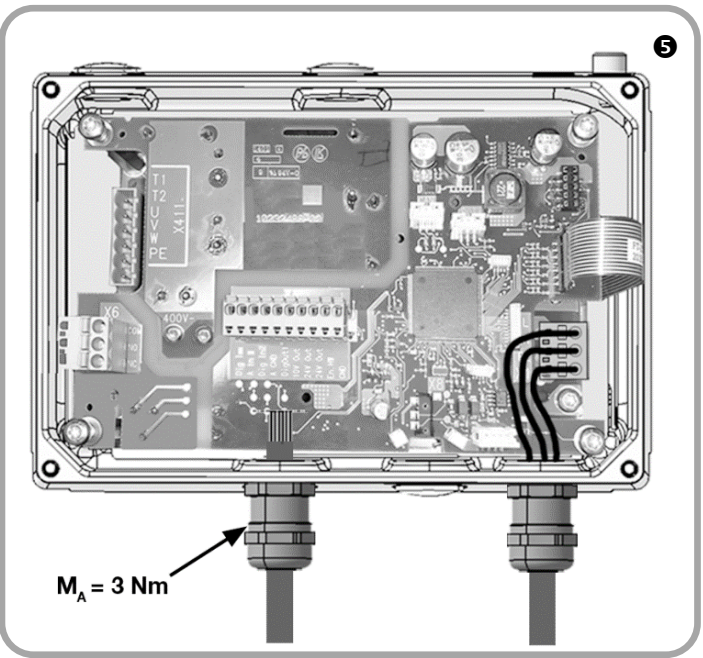
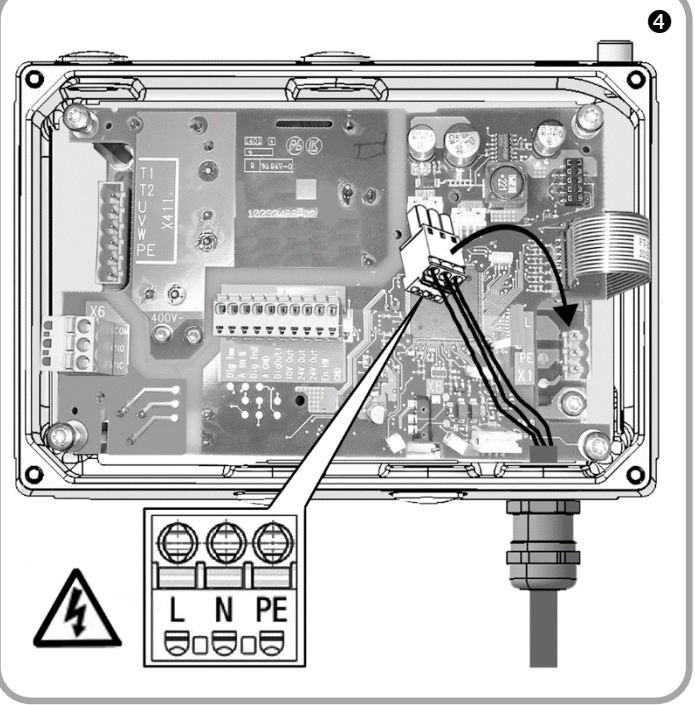
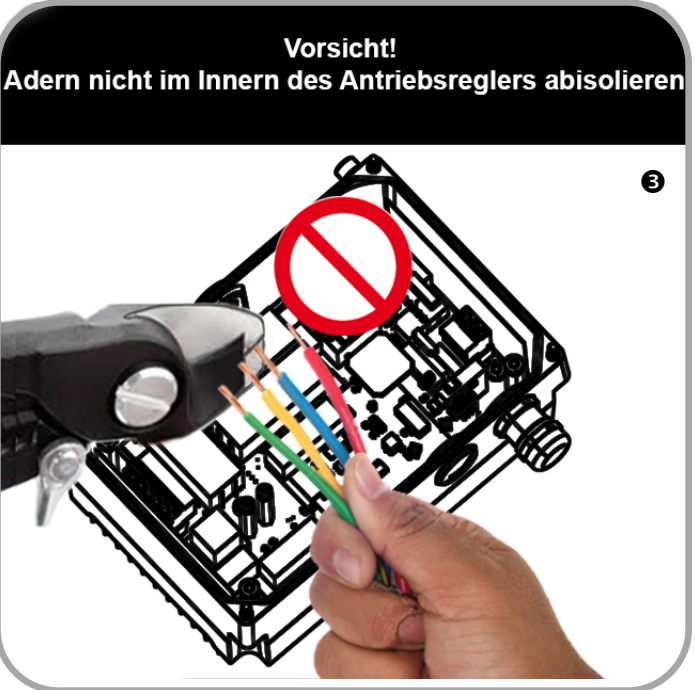
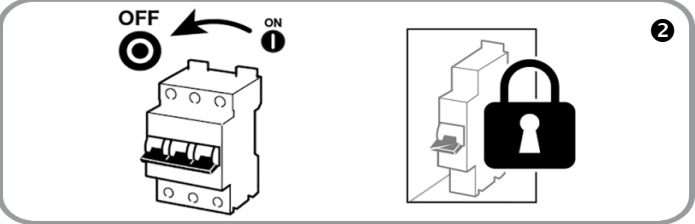
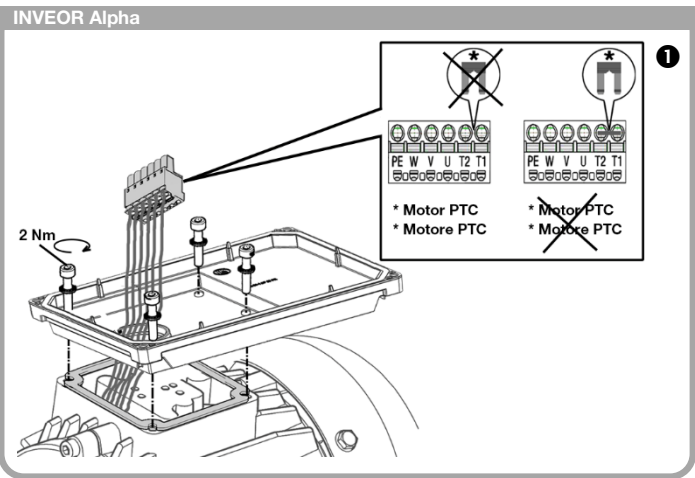
10	X5	1
Dig In 1	A In 1	Dig In 2
A GND	Dig Out 1	10 V Out
24 V Out	24 V Out	24 V Out
EN. HW	GND	

Leistungsanschlüsse

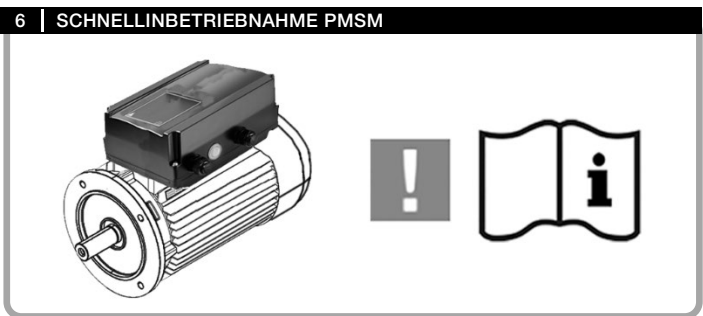
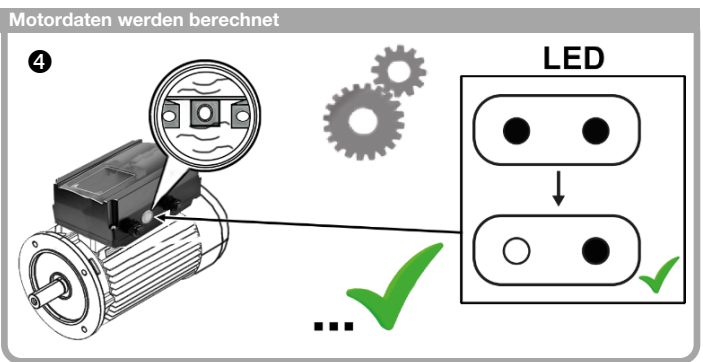
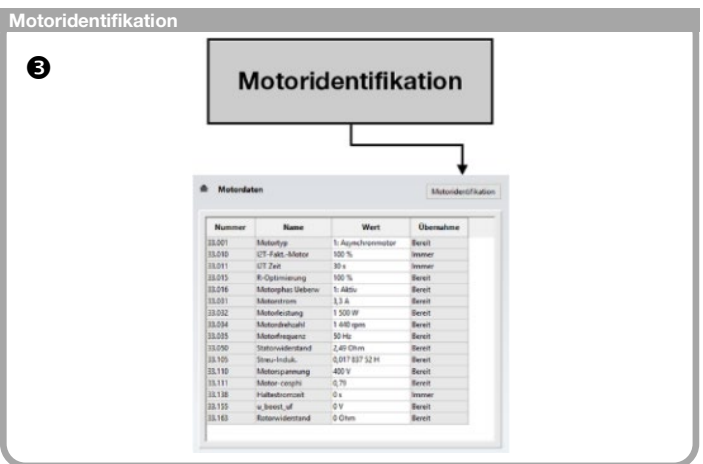




3 | GERÄT ANSCHLIESSEN

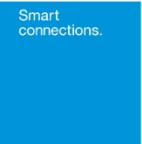


Hardwarefreigabe
** (siehe bildliche Darstellung 6 „Hardwarefreigabe INVEOR Alpha“)





12135345-0001



Short manual

INVEOR Alpha

EN

DOC02850337-0001

Direct link to operating manual

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Proper use

The INVEOR Alpha drive controller is a device for speed control in three-phase AC motors. Before installing and using the INVEOR Alpha, 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 (https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_drive_controller) 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 on the outside of the device. A suitable M6 x 8 screw (torque M_A= 4.0 Nm) is provided in INVEOR's scope of supply.
- If 1~ INVEOR devices are used, using standard type A RCDs (residual current-operated protective devices) is permitted to provide 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	
	Risk of burns	WARNING HOT SURFACE RISK OF BURN
	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: L, N
- Motor connection terminals X411: T1, T2, U, V, W
- Connecting terminals X6: Relay contacts

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. Unused open cable ends in the motor connection 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!
DEATH OR SERIOUS INJURY!
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 Alpha drive controller online at https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_drive_controller.

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>

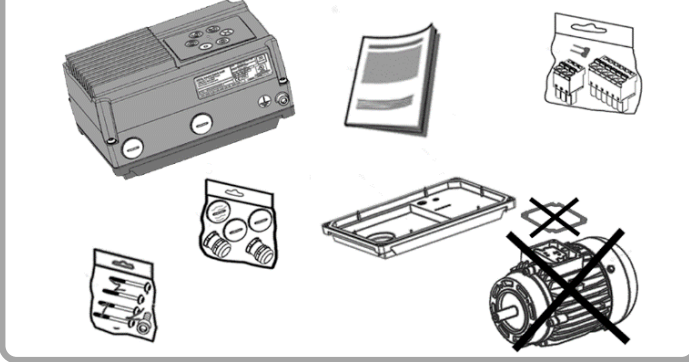
Contact details and service

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

Country	Phone	E-mail
Germany and other countries	+49 (0)2331 80 40-848	INVEOR-service@kostal.com

2 | INSTALLATION

Scope of delivery



Installation site

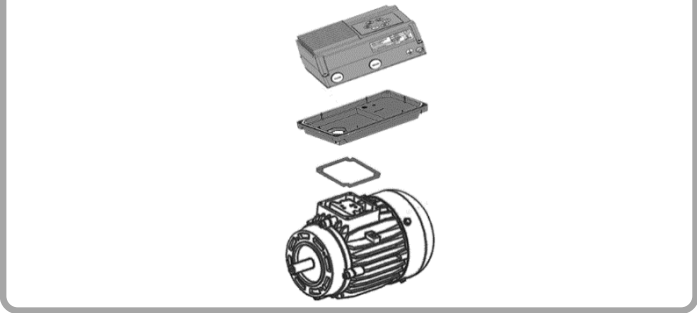
max. 2000 m

≤ 96 %

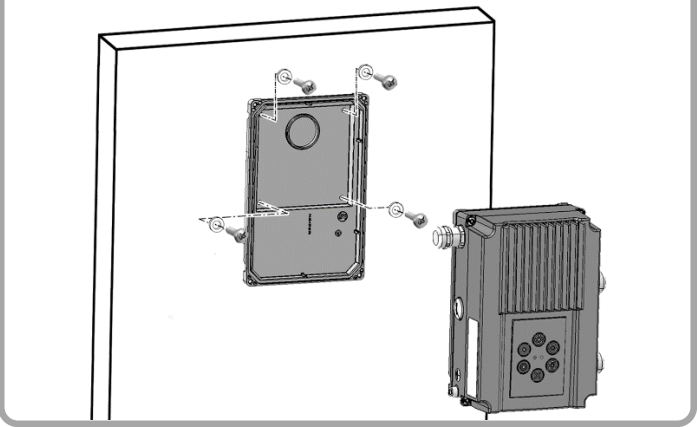
- 10...+ 40 °C
- 14...104 °F
1~

200
200
200

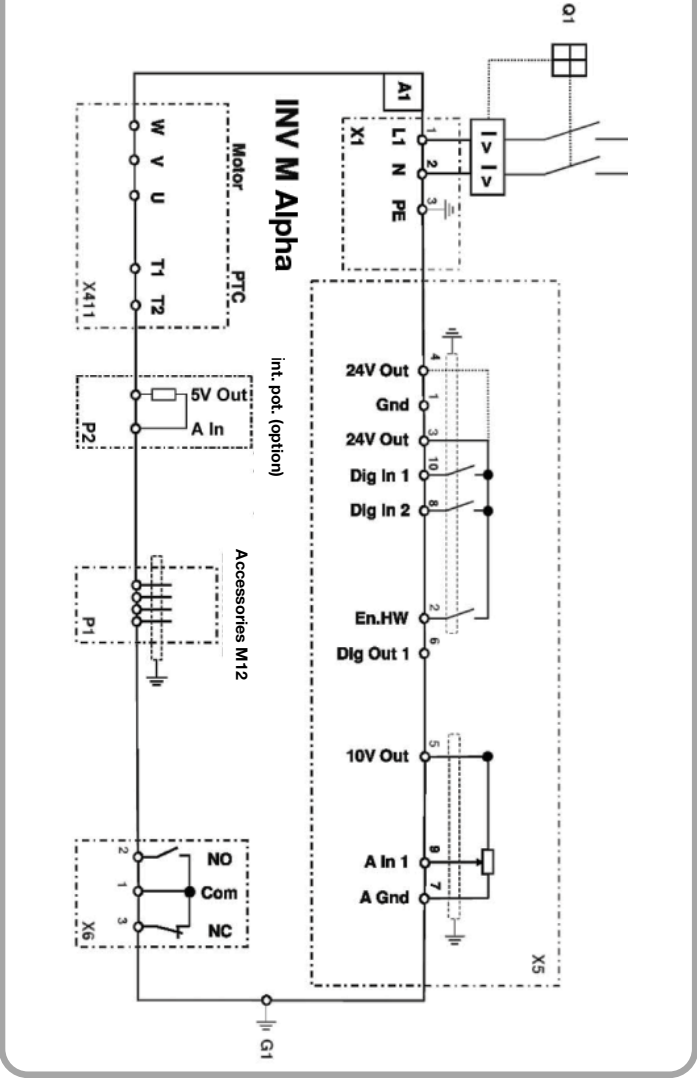
Installing drive controller



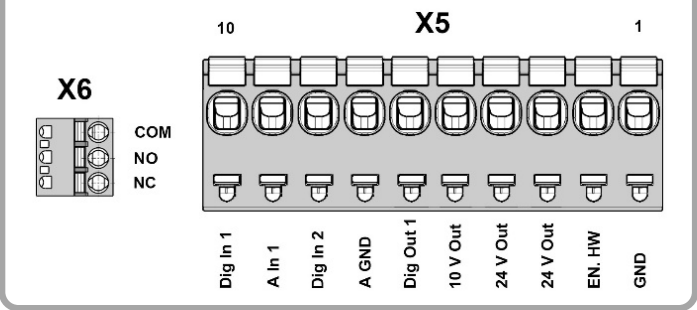
Wall mounting size Alpha



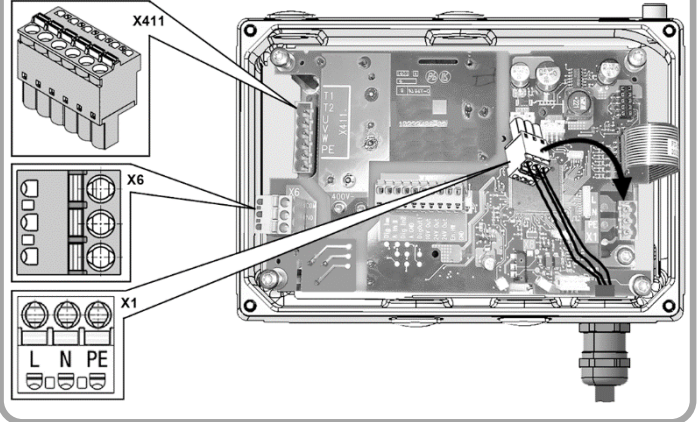
Connection diagram

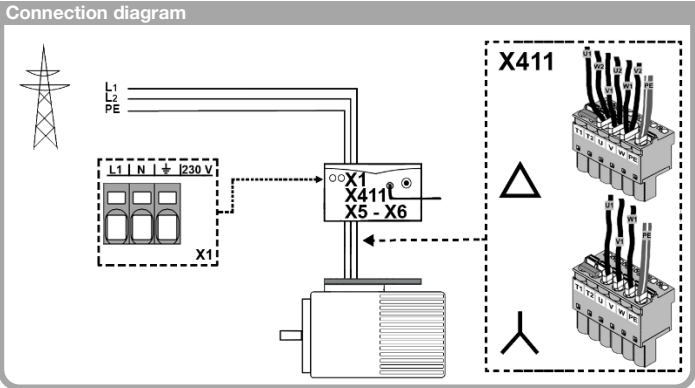


Control connections

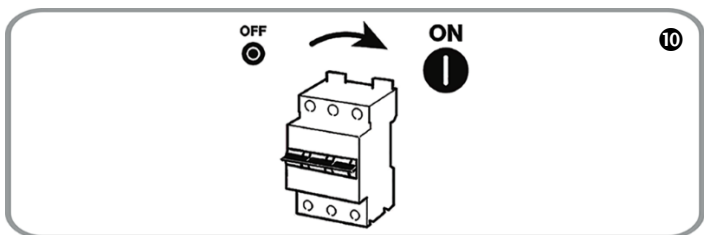
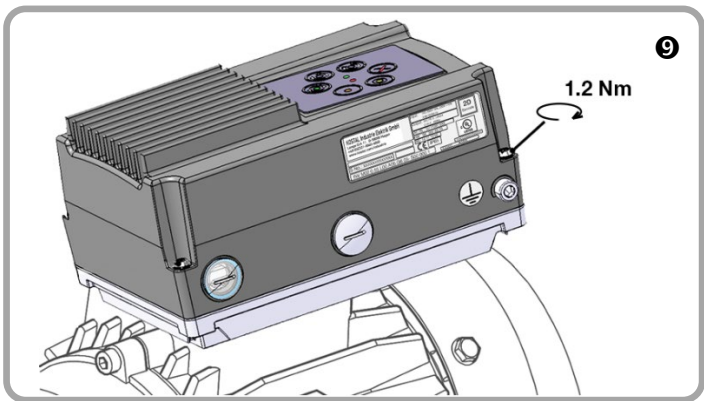
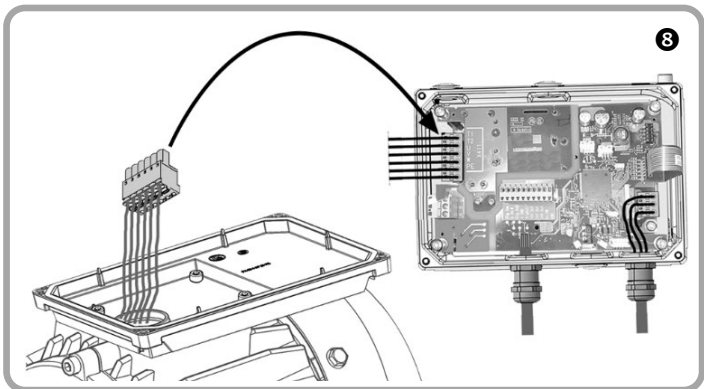
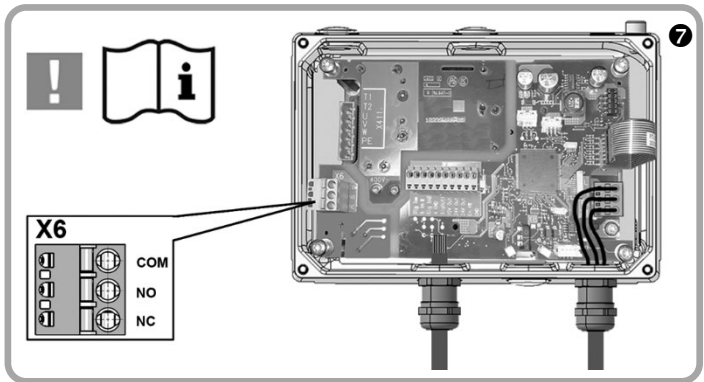
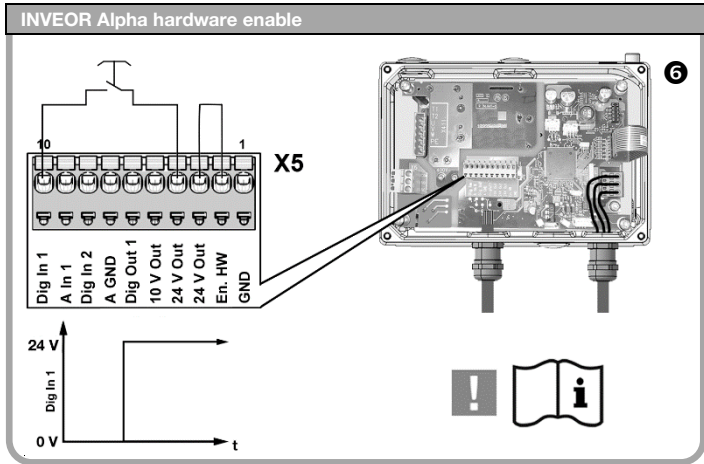
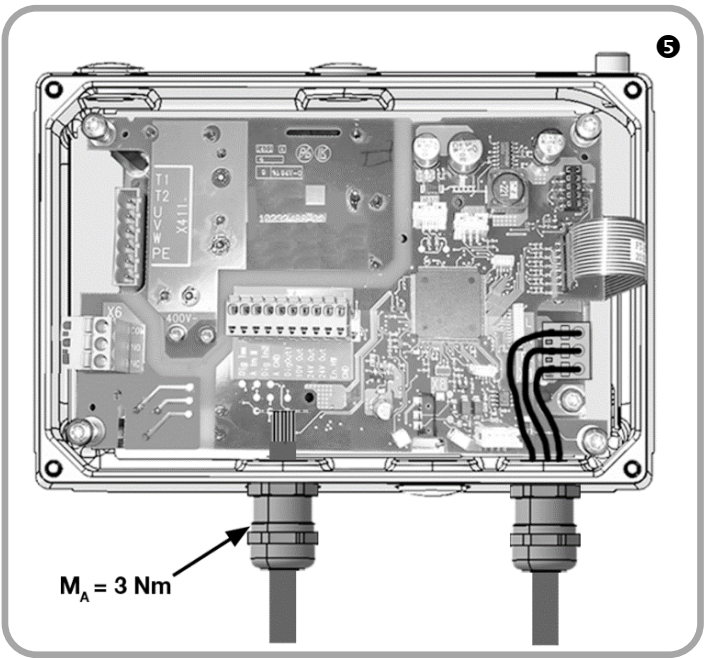
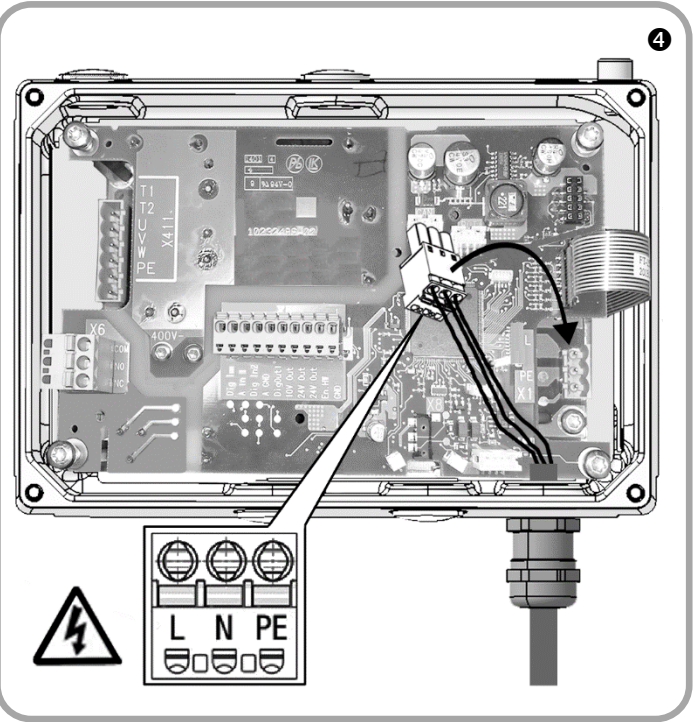
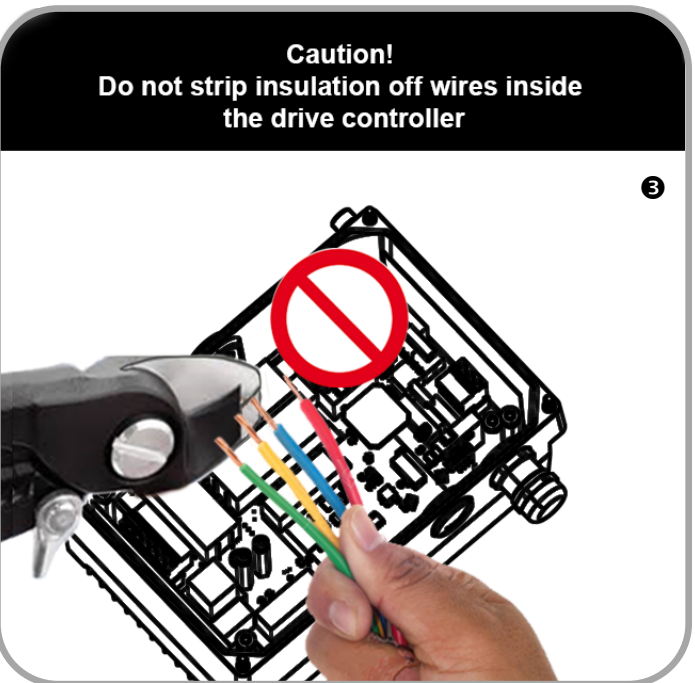
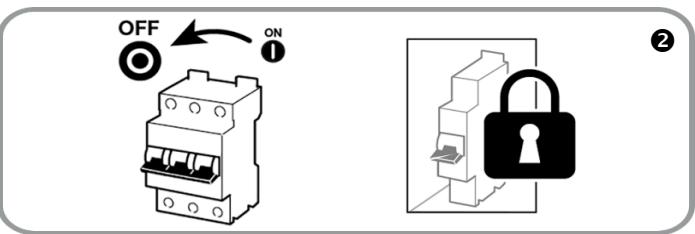
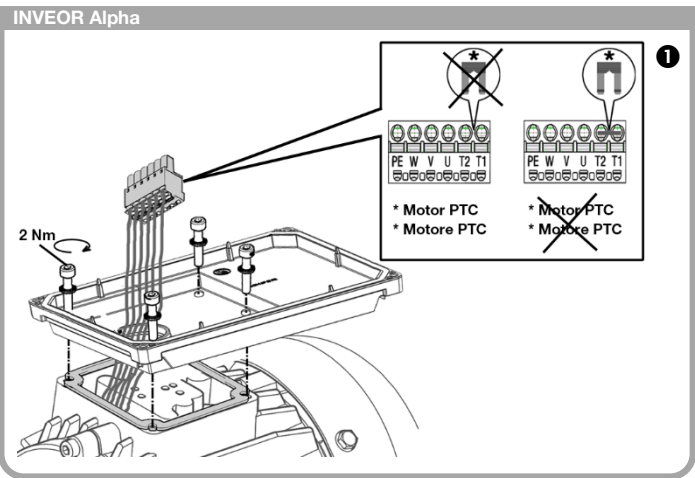


Power connections

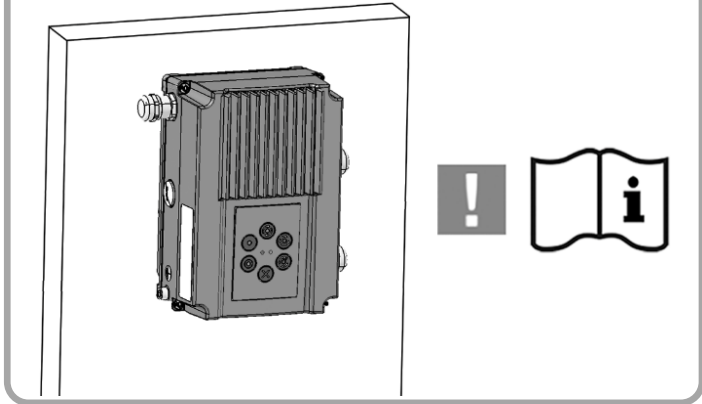




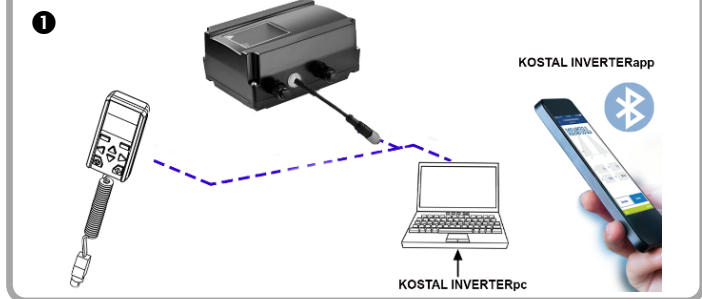
3 | CONNECTING DEVICE



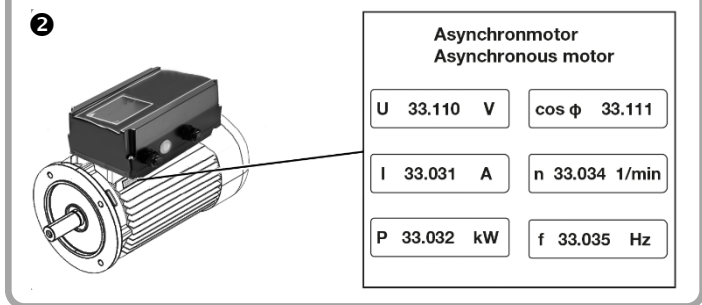
4 | CONNECTING DEVICE, WALL MOUNTING



5 | QUICKSTART



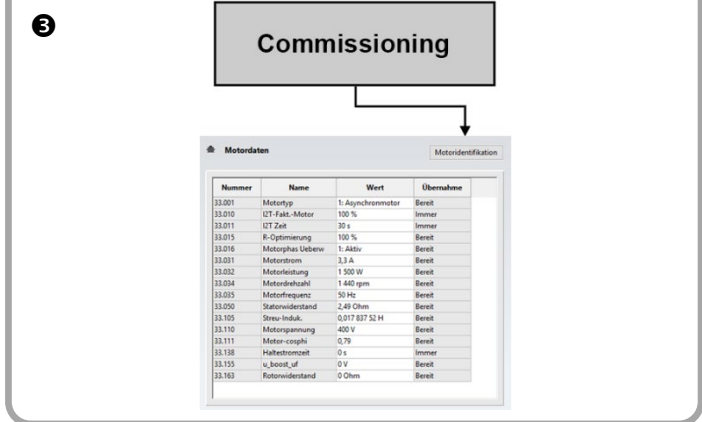
Parameters / motor data



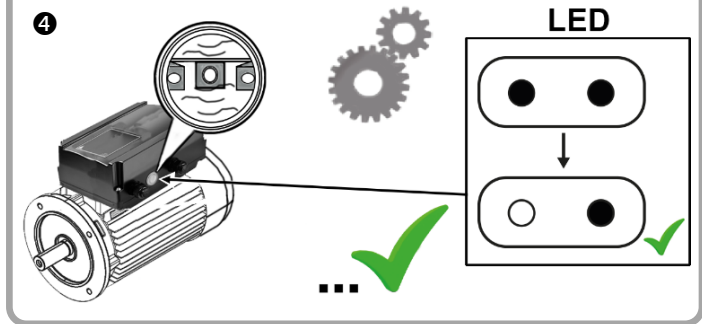
Hardware enable

(see visual representation 6 "INVEOR Alpha hardware enable")

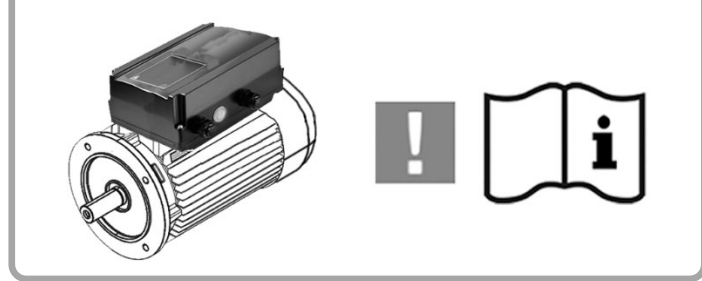
Motor identification



Motor data is being calculated



6 | QUICKSTART GUIDE, PMSM





12135345-0001



Breve manuale

INVEOR Alpha

IT

DOC02850341-0001

Link diretto istruzioni per l'uso

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General note on gender equality

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Utilizzo conforme alla destinazione d'uso

Il regolatore di velocità INVEOR Alpha è un dispositivo per la regolazione del numero di giri di motori a corrente alternata trifase. Prima dell'installazione e dell'utilizzo dell'INVEOR Alpha è importante aver letto e compreso questo documento. Utilizzare il regolatore di velocità in conformità alla destinazione d'uso. Il dispositivo deve essere impiegato esclusivamente all'interno del range di potenza previsto e sulla base delle condizioni ambientali ammesse. Il regolatore di velocità non deve essere utilizzato in aree a rischio di esplosione. Il campo di funzionamento consentito di tutti i componenti deve essere rispettato in ogni momento. Utilizzare il prodotto solo nel rispetto della documentazione dettagliata

(https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_regolatore_di_velocita) e

conformemente alle norme e direttive in vigore in loco. Le indicazioni riportate nei dati tecnici devono essere rispettate.

In caso di utilizzo non conforme, potrebbero inoltre verificarsi danni al dispositivo e ad altri oggetti. Il regolatore di velocità deve essere utilizzato unicamente per lo scopo previsto.



INFORMAZIONE IMPORTANTE

L'uso di regolatori di velocità in attrezzature non fisse è da considerarsi condizione ambientale straordinaria ed è consentito soltanto in conformità alle norme e direttive vigenti in loco.

- Far eseguire l'installazione e la disinstallazione soltanto da personale qualificato.
- Impiegare esclusivamente personale formato in materia di messa in opera, installazione, messa in servizio e comando.
- Non apportare modifiche al regolatore di velocità.
- Osservare le norme di sicurezza e antinfortunistiche generali e nazionali
- Nell'INVEOR possono verificarsi correnti di contatto > 3,5 mA.
Per tale ragione, applicare un conduttore di protezione per la messa a terra supplementare con la stessa sezione trasversale del conduttore di protezione per la messa a terra originale, conformemente a DIN EN 61800-5-1. È possibile effettuare il collegamento di un secondo conduttore di protezione per la messa a terra sul lato esterno del dispositivo. Nella fornitura dell'INVEOR è presente una vite M6 x 8 adatta al collegamento (coppia M_A = 4,0 Nm).
- Quando si usano dispositivi INVEOR 1~ sono consentiti interruttori automatici FI tradizionali di tipo A, detti anche RCD (residual current-operated protective device) per la protezione da contatto diretto o indiretto!
L'interruttore automatico FI deve essere un interruttore automatico FI sensibile a tutte le correnti (RCD tipo B) conformemente a DIN VDE 0160 e EN 50178!

Signatura

Sull'involucro del regolatore di velocità sono applicati contrassegni e targhette. Tali contrassegni e targhette non devono essere modificati né eliminati.

Simbolo	Significato	
	Pericolo di scossa e scarica elettrica	
	Pericolo	
	Pericolo di ustioni	WARNING HOT SURFACE RISK OF BURN
	Pericolo di scossa elettrica e scarica elettrica. Dopo lo spegnimento, attendere due minuti (tempo di scarica dei condensatori)	
	Collegamento a terra supplementare	
	Leggere e osservare le istruzioni per l'uso	
	Targhetta con dati tecnici più importanti e numero seriale	

1 | INDICAZIONI DI SICUREZZA



PERICOLO!

**PERICOLO DI MORTE PER SCOSSA E SCARICA ELETTRICA!
MORTE O GRAVI LESIONI**

Nel regolatore di velocità ci sono tensioni mortali. Solo un elettricista specializzato può aprire il dispositivo e operare su di esso. Durante l'installazione, la manutenzione o la riparazione, togliere sempre la tensione al regolatore di velocità e impedirne la riaccensione.

Le seguenti morsettiere possono condurre tensioni pericolose anche a motore spento:

- Morsettiere di collegamento alla rete X1: L, N
- Morsettiere di collegamento motore X411: T1, T2, U, V, W
- Morsettiere di collegamento X6: Contatti relè



PERICOLO!

**PERICOLO DI MORTE PER SCOSSA E SCARICA ELETTRICA!
MORTE O GRAVI LESIONI**

Collegare il dispositivo a terra in base a DIN EN 61140; VDE 0140, NEC e alle altre norme pertinenti.

Il regolatore di velocità deve essere collegato a terra insieme al motore, secondo quanto prescritto. In caso contrario possono verificarsi gravi lesioni o la morte.

Le estremità aperte, non utilizzate, dei cavi nelle scatole morsettiere del motore devono essere isolate.

Tra rete e regolatore di velocità, utilizzare interruttori automatici appropriati alla corrente nominale prescritta.

Sostituire le parti o i componenti danneggiati soltanto con ricambi originali



Pericolo di scossa elettrica e scarica elettrica.
Dopo lo spegnimento, attendere due minuti (tempo di scarica dei condensatori)

CAUTELA!



PERICOLO DI USTIONI A CAUSA DI SUPERFICI ROVENTI!

GRAVI USTIONI DELLA PELLE A CAUSA DI SUPERFICI ROVENTI!

Lasciare raffreddare a sufficienza il dissipatore di calore del regolatore di velocità.



PERICOLO!

**PERICOLO DI MORTE PER MOTORI CHE SI RIAVVIANO E COMPONENTI MECCANICI IN MOVIMENTO!
MORTE O GRAVI LESIONI!**

La mancata osservanza può causare la morte, gravi lesioni fisiche o consistenti danni materiali!

Determinati parametri impostati, così come la modifica di impostazioni di parametri durante il funzionamento, possono causare il riavvio automatico del regolatore di velocità INVEOR dopo un'assenza della tensione di alimentazione oppure variazioni indesiderate del comportamento di funzionamento.

Superficie di installazione e immediate vicinanze (solo in caso di montaggio a parete)

La superficie di installazione e le immediate vicinanze devono avere le seguenti caratteristiche: fisse, verticali, in piano, non facilmente infiammabili, non permanentemente vibranti.

La superficie di installazione deve fornire supporto per le viti di fissaggio.

Trasporto e stoccaggio



Sono possibili danni materiali

Rischio di danneggiamento del regolatore di velocità!

Pericolo di danni al regolatore di velocità a causa di trasporto, stoccaggio, posizionamento e installazione impropri!

Trasportare il regolatore di velocità in modo appropriato nella confezione originale su un pallet.

Immagazzinare il regolatore di velocità a regola d'arte.

Fare eseguire il posizionamento e l'installazione soltanto da personale qualificato.

Istruzioni per l'uso complete

Istruzioni per l'uso esaustive del regolatore di velocità INVEOR Alpha sono disponibili in Internet all'indirizzo

https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_regolatore_di_velocita.

Dichiarazione di conformità UE

La società KOSTAL Industrie Elektrik GmbH dichiara con la presente che i regolatori di velocità descritti nel presente documento soddisfano i requisiti fondamentali e le altre disposizioni rilevanti delle direttive sotto indicate.

- Direttiva 2014/30/UE (compatibilità elettromagnetica, EMC).
- Direttiva 2014/35/UE (messa a disposizione sul mercato del materiale elettrico destinato a essere adoperato entro taluni limiti di tensione – in breve: Direttiva bassa tensione)
- Direttiva 2011/65/UE (restrizione dell'uso di determinate sostanze pericolose nelle apparecchiature elettriche e elettroniche – in breve: Direttiva RoHS)

Una dichiarazione di conformità UE esaustiva è disponibile in Internet alla pagina

https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_regolatore_di_velocita

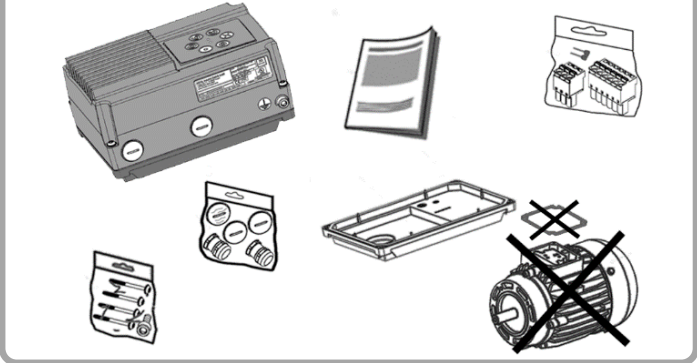
Contatti e assistenza

In caso di domande tecniche, si prega di rivolgersi alla nostra assistenza telefonica.

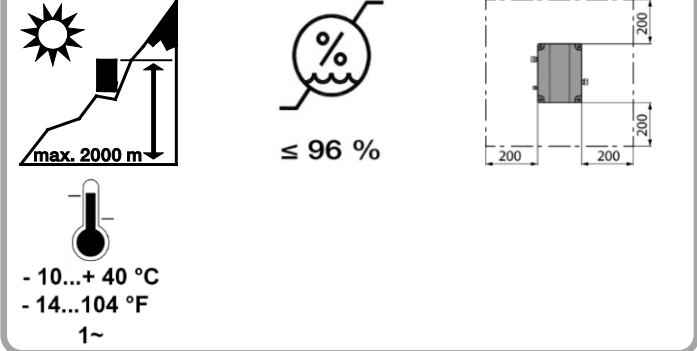
Paese	Telefono	E-mail
Germania e altri paesi	+49 (0)2331 80 40-848	INVEOR-service@kostal.com

2 | INSTALLAZIONE

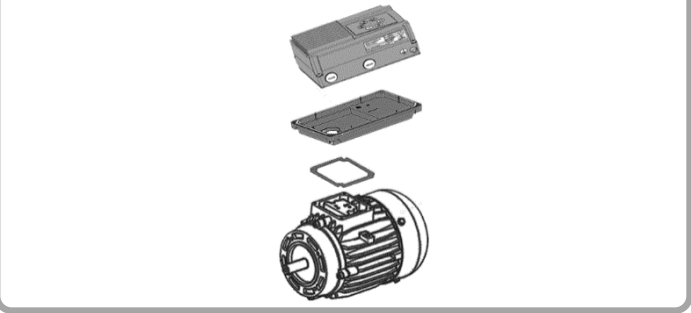
Volume di fornitura



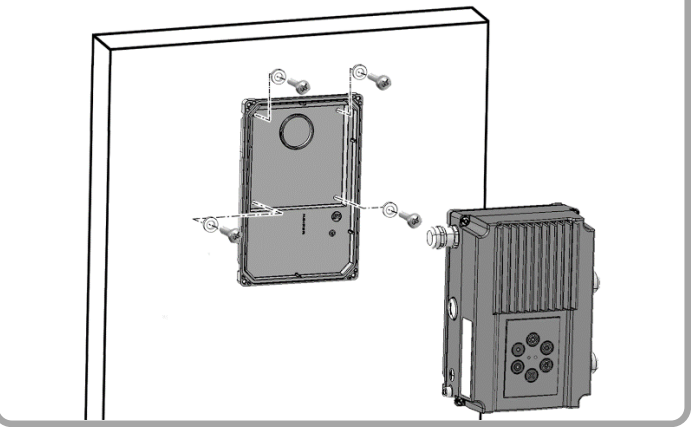
Luogo di installazione



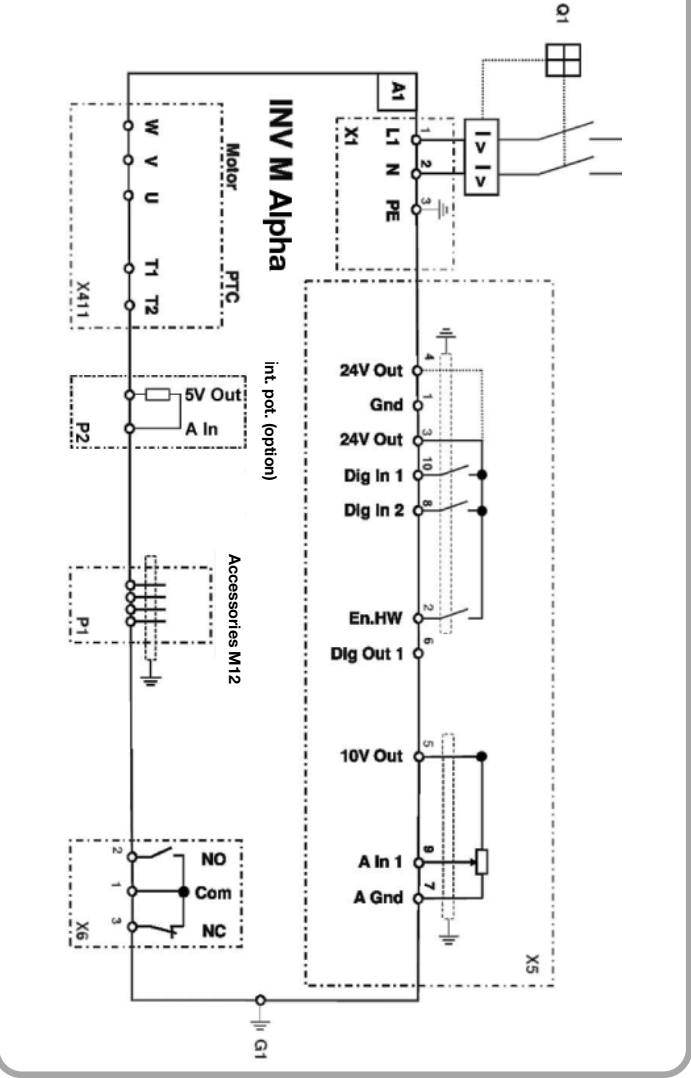
Installazione del regolatore di velocità



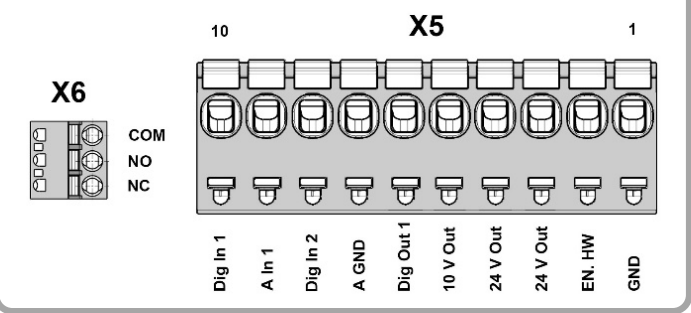
Installazione a parete taglia Alpha



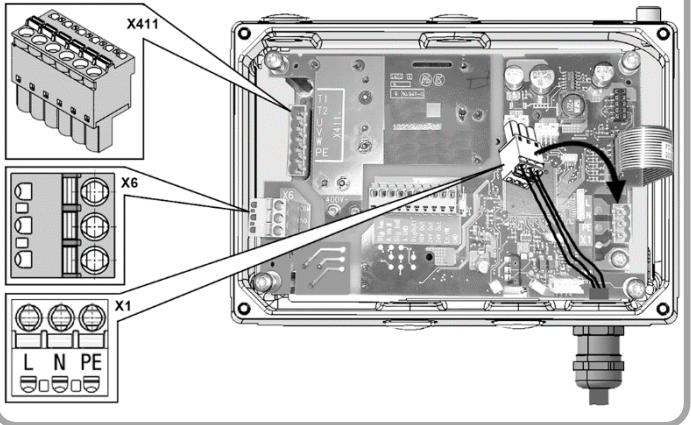
Schema dei collegamenti



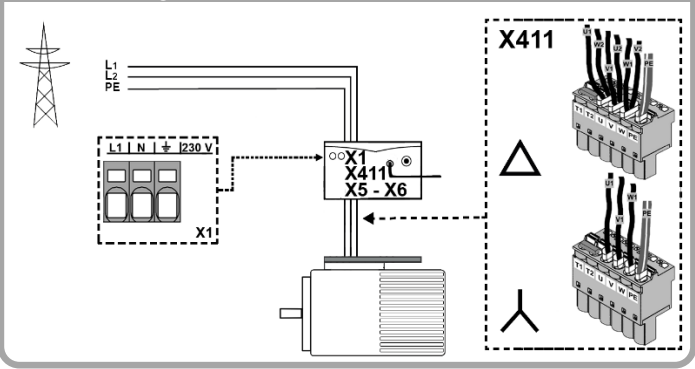
Connessioni di comando



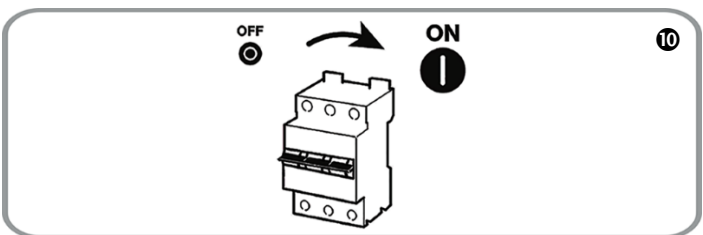
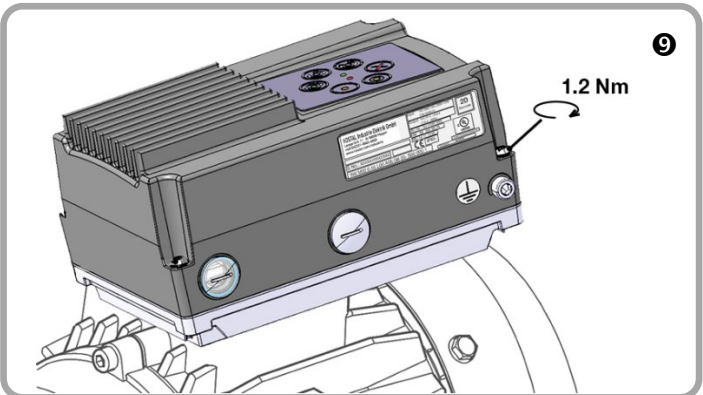
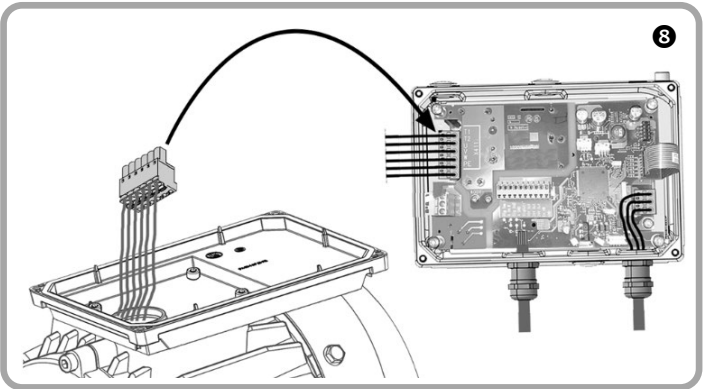
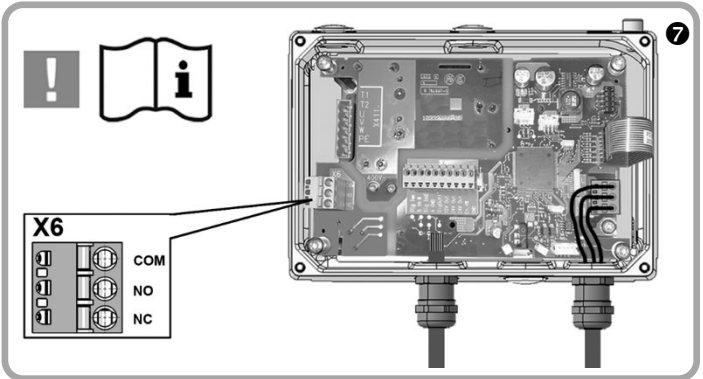
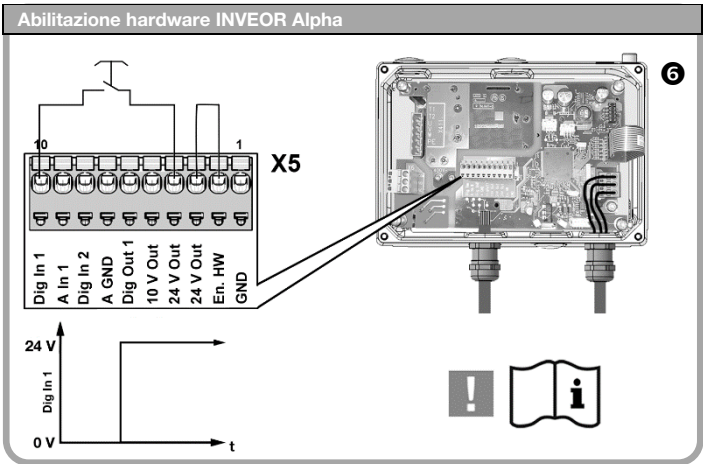
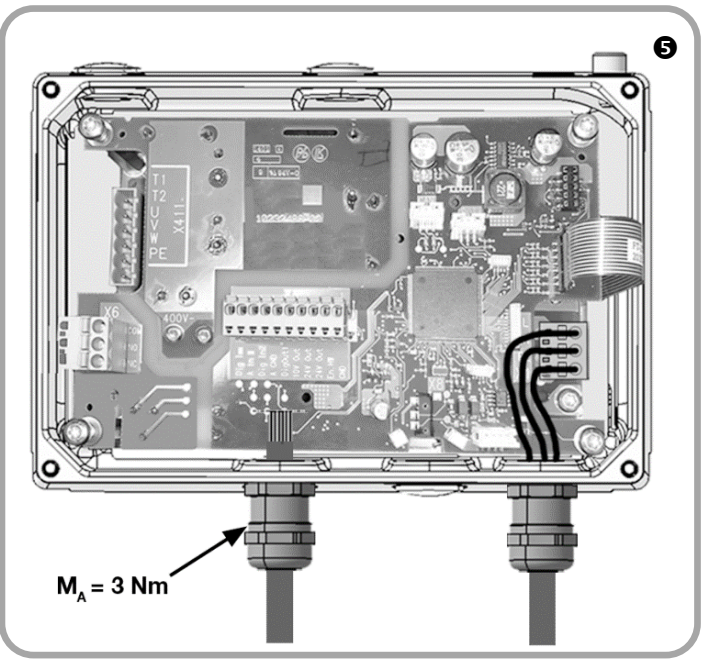
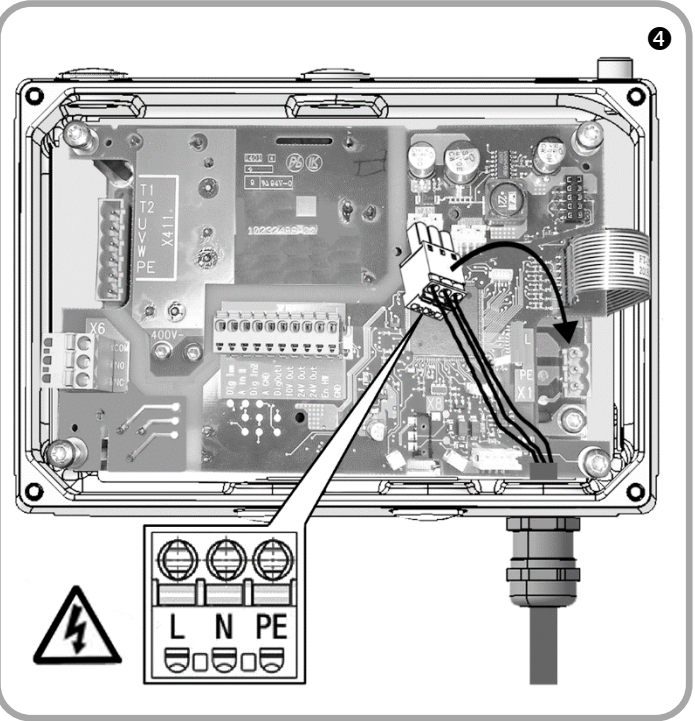
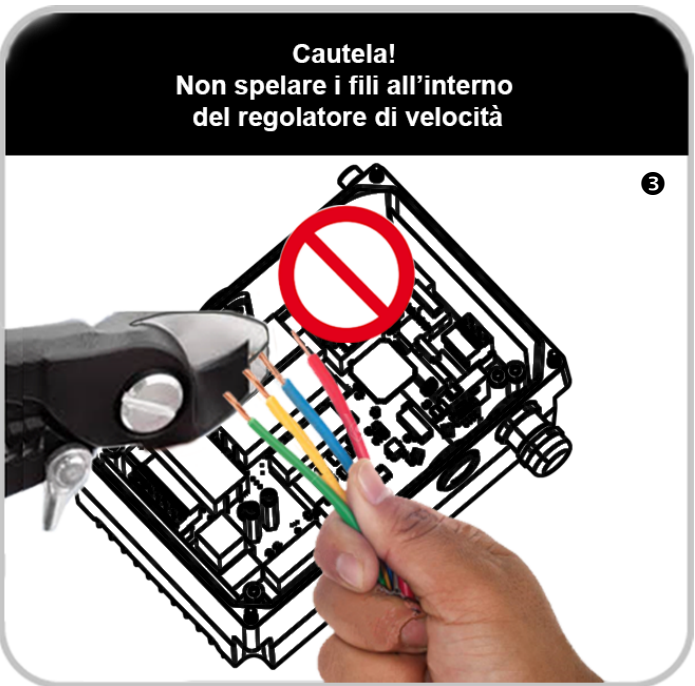
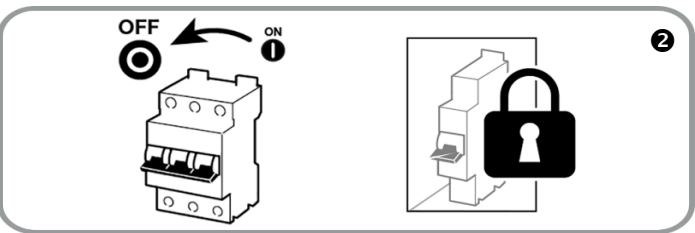
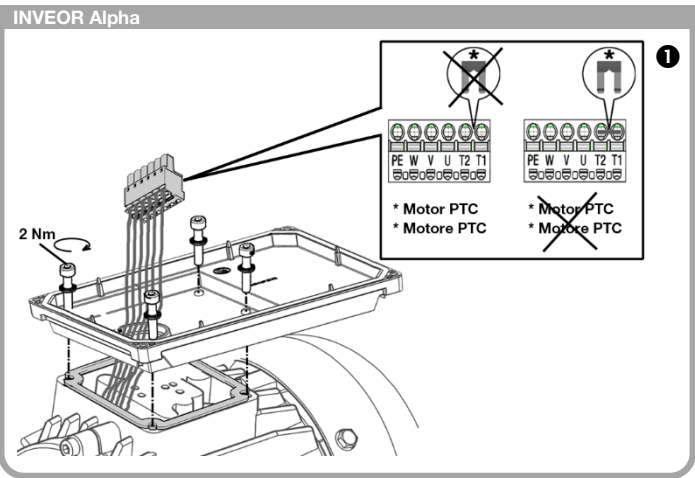
Connessioni di potenza



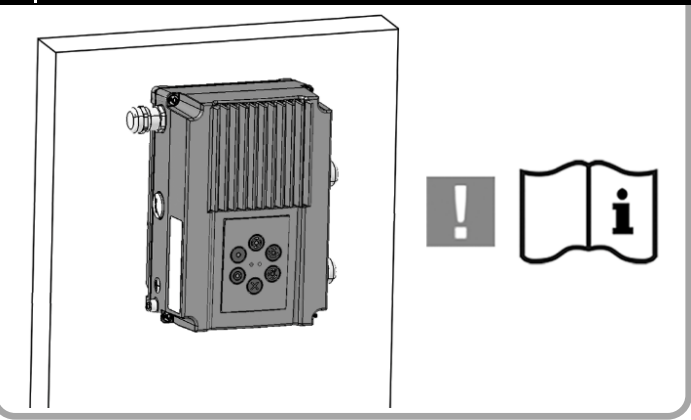
Schema dei collegamenti



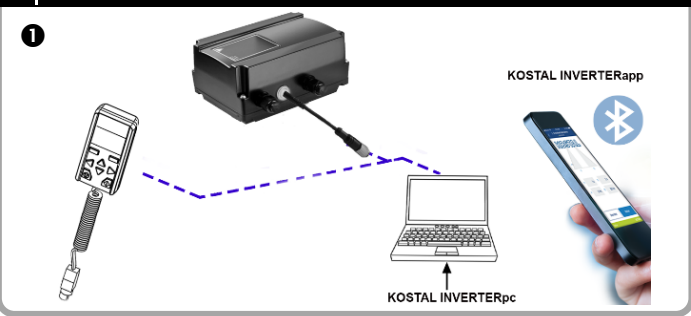
3 | COLLEGAMENTO DEL DISPOSITIVO



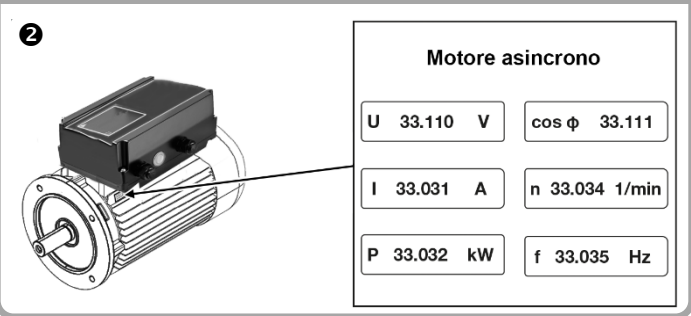
4 | COLLEGAMENTO DEL DISPOSITIVO - MONTAGGIO A PARETE



5 | MESSA IN SERVIZIO RAPIDA



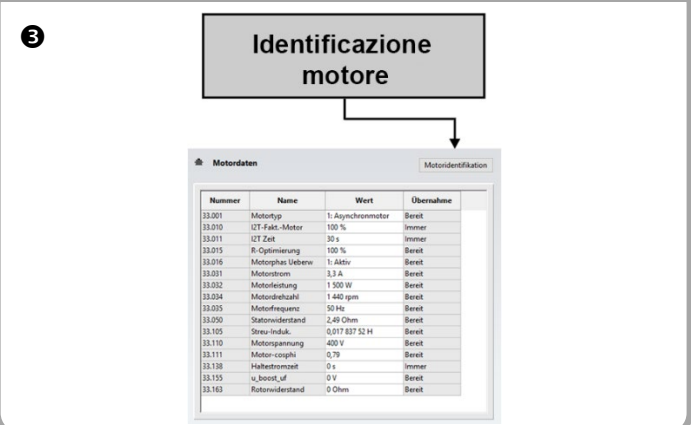
Parametri / Dati motore



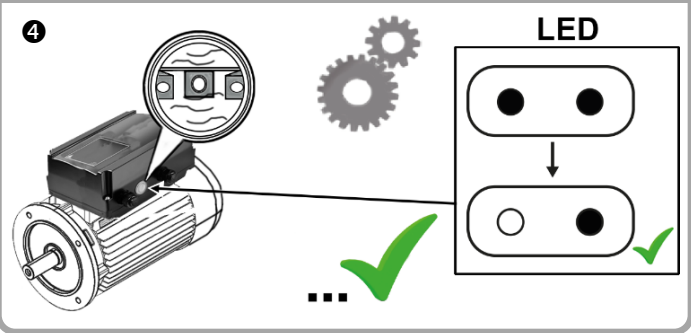
Abilitazione hardware

** (vedi figura 6 "Abilitazione hardware INVEOR Alpha")

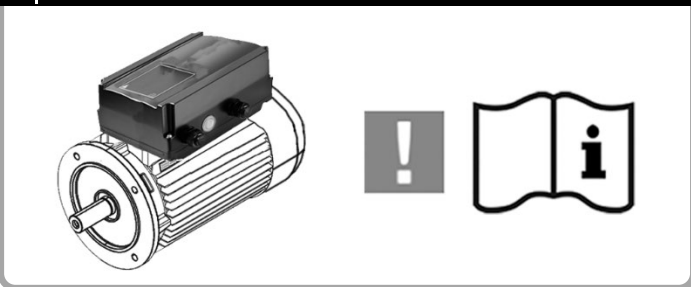
Identificazione motore



Calcolo in corso dei dati del motore



6 | MESSA IN SERVIZIO RAPIDA PMSM



INDUSTRIE ELEKTRIK

KOSTAL



12135345-0001

Smart connections.

Instucciones breves

INVEOR Alpha

Es

DOC02850339-0001

Enlace directo a las instrucciones de uso



General note on gender equality

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Uso adecuado

El regulador de accionamiento INVEOR Alpha es un equipo para la regulación de velocidad de motores trifásicos. Antes de la instalación y el uso del INVEOR Alpha debe haberse leído y comprendido este documento. Utilice principalmente el regulador de accionamiento según el uso previsto. El equipo solo debe emplearse dentro del rango de potencia previsto y bajo las condiciones ambientales admisibles. El regulador de accionamiento no está autorizado para el funcionamiento en zonas con peligro de explosión. El margen de funcionamiento permitido de todos los componentes debe cumplirse en todo momento. Utilice únicamente el producto según los datos de la detallada documentación https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_drive_controller y según las normas y directivas válidas in situ. Las indicaciones de los datos técnicos deben cumplirse imprescindiblemente.

En caso de uso no adecuado pueden producirse daños en el equipo y otros bienes materiales. El regulador de accionamiento debe utilizarse exclusivamente para el uso previsto.

!

INFORMACIÓN IMPORTANTE

El uso de reguladores de accionamiento en equipamientos no fijos se considera una condición ambiental extraordinaria y solo se admite según las correspondientes normas y directivas vigentes in situ.

- Encargue el montaje y el desmontaje únicamente a personal cualificado de forma correspondiente.
- Contrate solo a personal con la debida formación para el montaje, la instalación, la puesta en funcionamiento y el manejo.
- No realice modificaciones en el regulador de accionamiento.
- Tenga en cuenta las disposiciones de seguridad y de prevención de accidentes generales y nacionales
- En el INVEOR pueden producirse corrientes de contacto > 3,5 mA. Por este motivo, según DIN EN 61800-5-1 instale un conductor protector de puesta a tierra adicional con la misma sección que el conductor protector de puesta a tierra original. La posibilidad de conectar un segundo conductor de protección a tierra se encuentra en la parte exterior del equipo. El volumen de suministro del INVEOR incluye un tornillo M6 x 8 adecuado para la conexión (par de apriete M_A= 4,0 Nm).
- ¡Al utilizar equipos 1~ INVEOR se permiten interruptores protectores FI del tipo A, también denominados RCD (residual current-operated protective device o dispositivo protector accionado por corriente residual) para protegerlos frente a contacto directo o indirecto!
- ¡El interruptor protector FI debe ser según DIN VDE 0160 y EN 50178 un interruptor protector FI sensible a todo tipo de corrientes (RCD tipo B)!

Identificaciones

En la carcasa del regulador de accionamiento se han colocado rótulos e identificaciones. Estos rótulos e identificaciones no deben modificarse ni retirarse.

Símbolo	Significado
	Peligro debido a electrocución y descarga eléctrica
	Peligro
	Peligro de quemaduras
	Peligro debido a electrocución y descarga eléctrica. Después de la desconexión es necesario esperar dos minutos (tiempo de descarga de los condensadores)
	Conexión de tierra adicional
	Leer y respetar las instrucciones de uso
	Placa de características con los datos técnicos más importantes y el número de serie

1 | INDICACIONES DE SEGURIDAD

!

¡PELIGRO!

¡PELIGRO DE MUERTE DEBIDO A ELECTROCUCIÓN Y DESCARGA ELÉCTRICA!

MUERTE O LESIONES GRAVES

En el regulador de accionamiento hay tensiones peligrosas. Únicamente se permite abrir el equipo y realizar trabajos en el mismo a electricistas profesionales.

Desconecte siempre de la tensión el regulador de accionamiento durante el montaje, el mantenimiento y las reparaciones y asegúrelo contra reconexión.

Los siguientes bornes también pueden conducir tensiones peligrosas durante la parada del motor:

- bornes de conexión de red X1: L, N
- bornes de conexión del motor X411: T1, T2, U, V, W
- bornes de conexión X6: contactos de relé

!

¡PELIGRO!

¡PELIGRO DE MUERTE DEBIDO A ELECTROCUCIÓN Y DESCARGA ELÉCTRICA!

MUERTE O LESIONES GRAVES

Conecte a tierra el aparato según DIN EN 61140; VDE 0140, NEC y otras normas pertinentes.

El regulador de accionamiento debe conectarse a tierra conforme a lo prescrito junto con el motor. De lo contrario, la consecuencia puede ser la muerte o lesiones graves.

Los extremos de cable abiertos no utilizados en la caja de conexión del motor deben aislarse.

Utilice interruptores magnetotérmicos adecuados con la corriente nominal prescrita entre la red y el regulador de accionamiento.

Las piezas o los componentes defectuosos básicamente solo deben ser sustituidos por piezas originales

!

2 min

Peligro debido a electrocución y descarga eléctrica. Después de la desconexión es necesario esperar dos minutos (tiempo de descarga de los condensadores)

SS

¡PRECAUCIÓN!

¡PELIGRO DE QUEMADURAS DEBIDO A SUPERFICIES CALIENTES!

¡QUEMADURAS GRAVES DE LA PIEL DEBIDO A SUPERFICIES CALIENTES!

Espera a que el elemento de refrigeración del regulador de accionamiento se haya enfriado lo suficiente.

!

¡PELIGRO!

¡PELIGRO DE MUERTE DEBIDO AL REARRANQUE DE MOTORES Y PIEZAS MECÁNICAS GIRATORIAS!

¡MUERTE O LESIONES GRAVES!

¡El incumplimiento puede provocar lesiones físicas graves o daños materiales considerables!

Algunos ajustes de parámetros concretos y la modificación de ajustes de parámetros durante el servicio pueden hacer que el regulador de accionamiento INVEOR vuelva a arrancar automáticamente tras una interrupción de la tensión de alimentación, y/o que se produzcan modificaciones no deseadas del estado de funcionamiento.

Superficie de montaje y entorno cercano (solo en caso de montaje mural)

La superficie de montaje y su entorno cercano deben poseer las siguientes propiedades: fijos, verticales, lisos, no fácilmente inflamables, no vibrantes de forma permanente. La superficie de montaje debe ofrecer sujeción para tornillos de fijación.

Transporte y almacenaje

!

Posibles daños materiales

¡Peligro de daños en el regulador de accionamiento!

¡Peligro de daños en el regulador de accionamiento a causa de un transporte, almacenamiento, instalación y montaje incorrectos!

Transporte el regulador de accionamiento en general de forma adecuada en el embalaje original sobre una paleta.

Almacene el regulador de accionamiento principalmente de forma técnicamente correcta.

Encargue la instalación y el montaje únicamente a personal cualificado.

Instrucciones de uso completas

Encontrará las instrucciones de uso detalladas del regulador de accionamiento INVEOR Alpha en Internet en https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_drive_controller

Declaración de conformidad UE

La empresa KOSTAL Industrie Elektrik GmbH declara por la presente que los reguladores de accionamiento descritos en este documento cumplen los requisitos básicos y otras disposiciones relevantes de las directivas citadas a continuación.

- Directiva 2014/30/UE (Compatibilidad electromagnética, CEM)
- Directiva 2014/35/UE (comercialización de material eléctrico destinado a utilizarse con determinados límites de tensión en el mercado, abreviado: Directiva de baja tensión)
- Directiva 2011/65/UE (restricciones a la utilización de determinadas sustancias peligrosas en aparatos eléctricos y electrónicos, abreviado: Directiva RoHS)

Encontrará una declaración de conformidad UE detallada en Internet en <http://www.kostal-industrie-elektrik.com/de-DE/Download/Antriebstechnik>

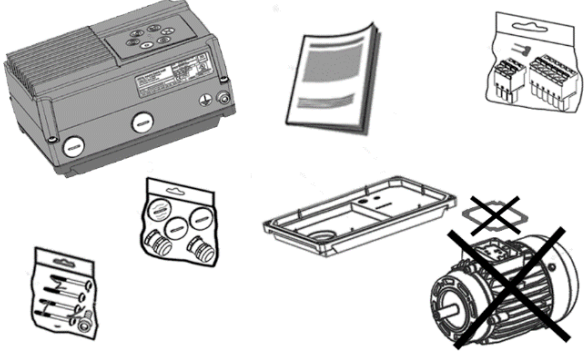
Datos de contacto y asistencia técnica

En caso de preguntas técnicas, diríjase a nuestra línea directa de atención al cliente.

País	Teléfono	Correo electrónico
Alemania y otros países	+49 (0)2331 80 40-848	INVEOR-service@kostal.com

2 | INSTALACIÓN

Volumen de suministro



Lugar de montaje

max. 2000 m

10...+ 40 °C

14...104 °F

1~

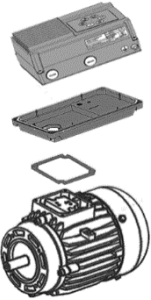
≤ 96 %

200

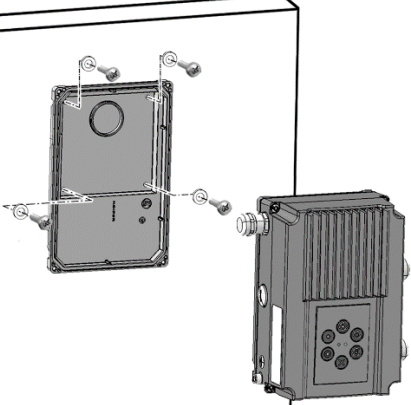
200

200

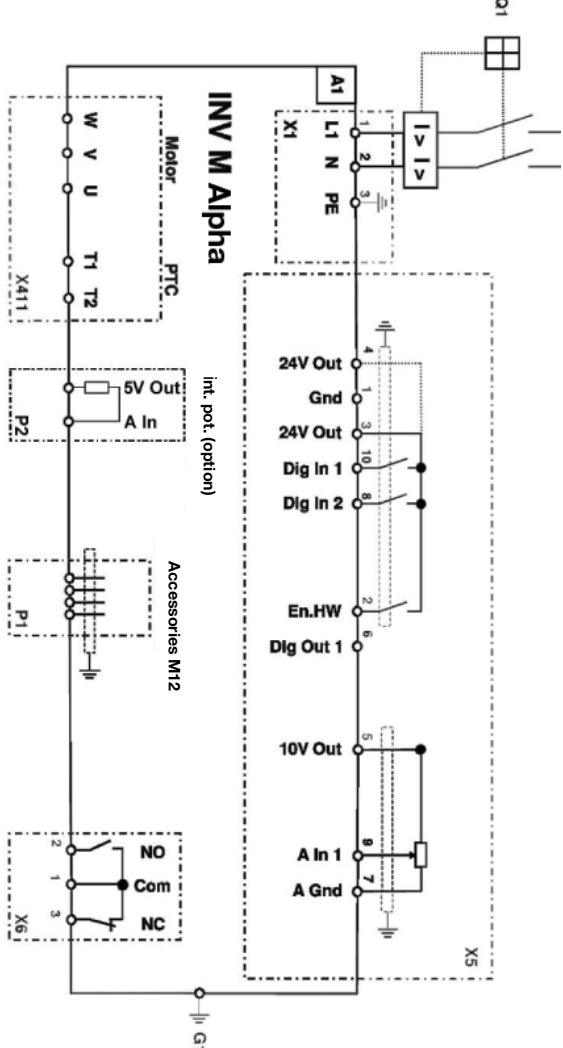
Montar el regulador de accionamiento



Montaje en pared tamaño Alpha



Esquema de conexiones



Conexiones de mando

X6

COM

NO

NC

10

X5

1

Dig In 1

A In 1

Dig In 2

A GND

Dig Out 1

10 V Out

24 V Out

24 V Out

EN. HW

GND

Conexiones de potencia

X411

X6

X1

L

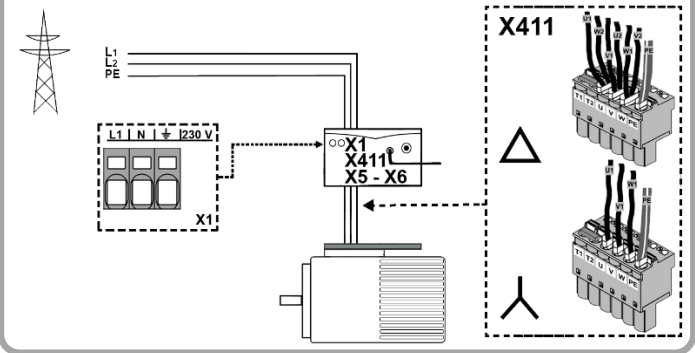
N

PE

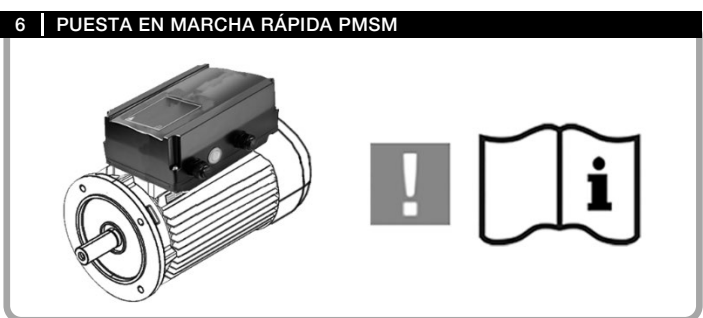
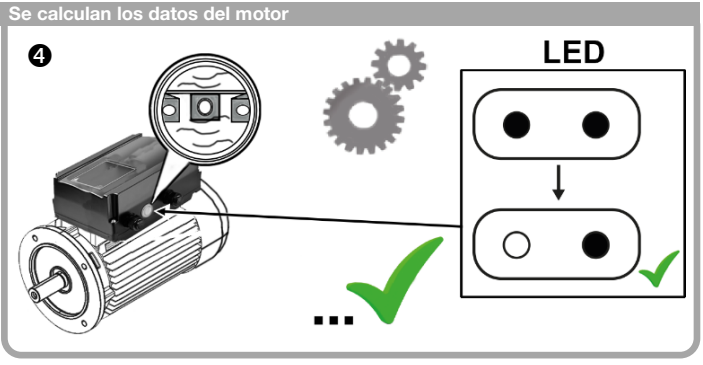
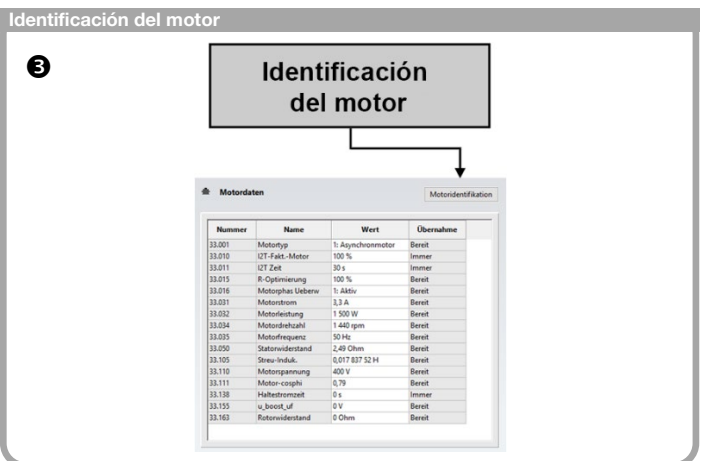
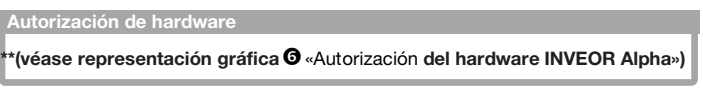
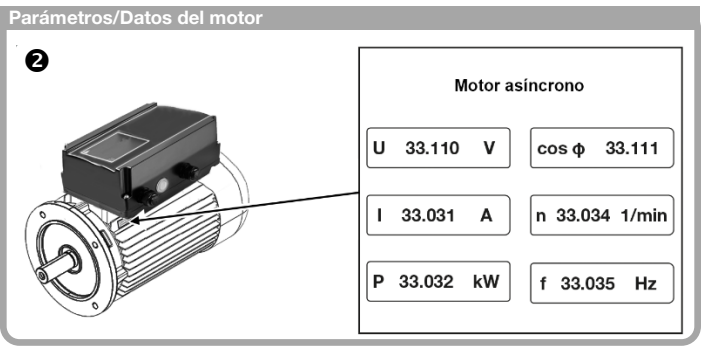
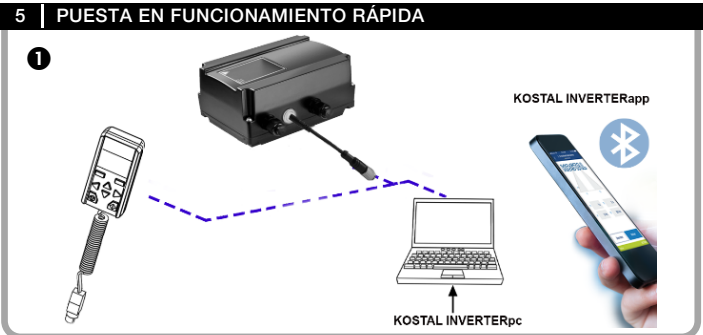
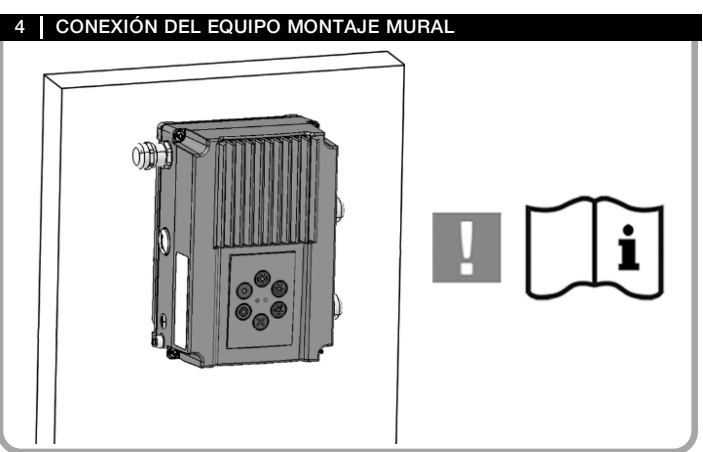
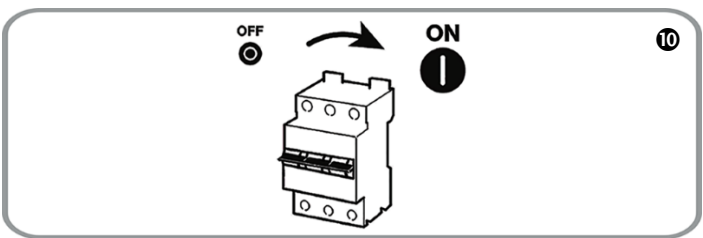
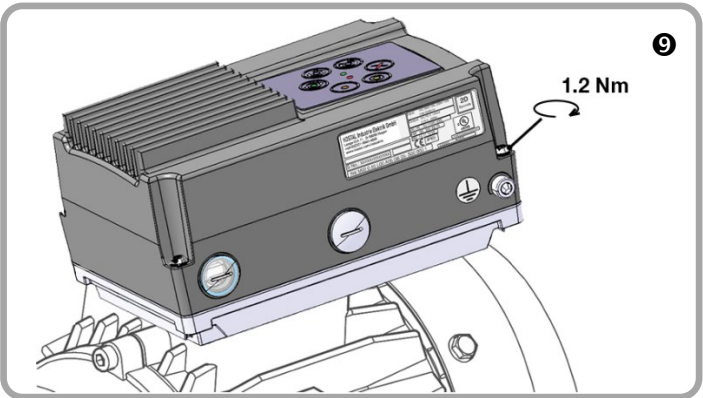
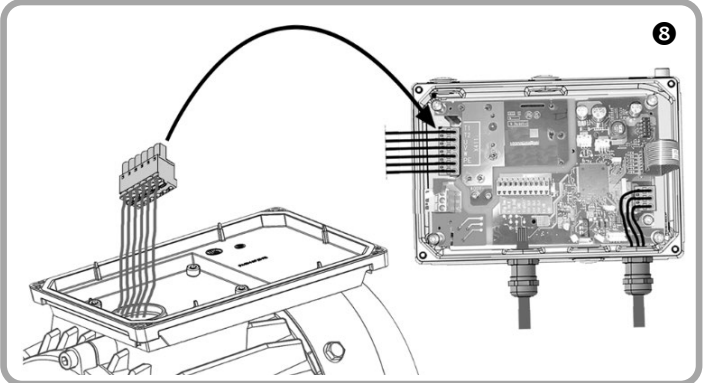
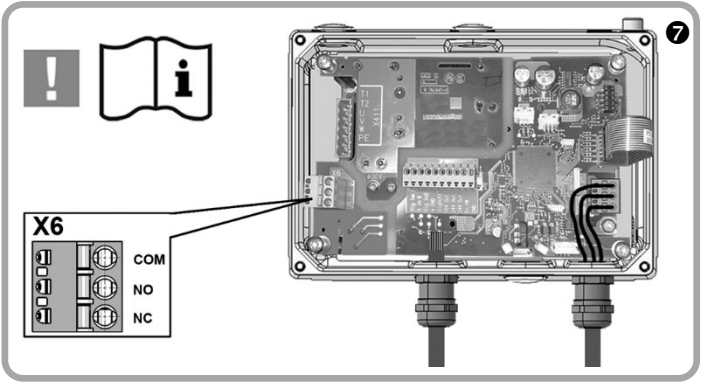
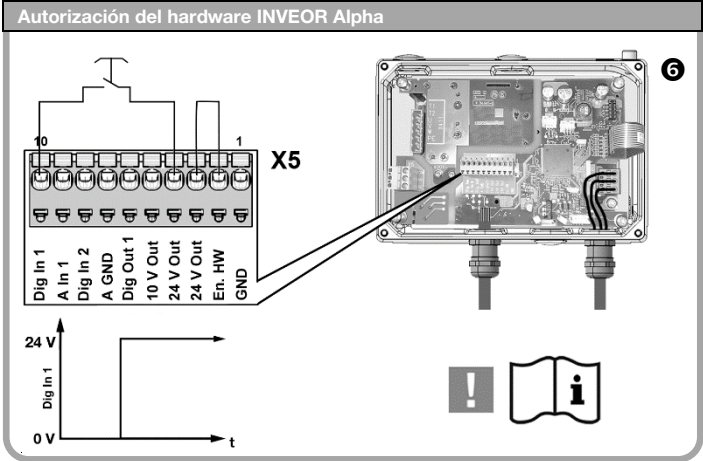
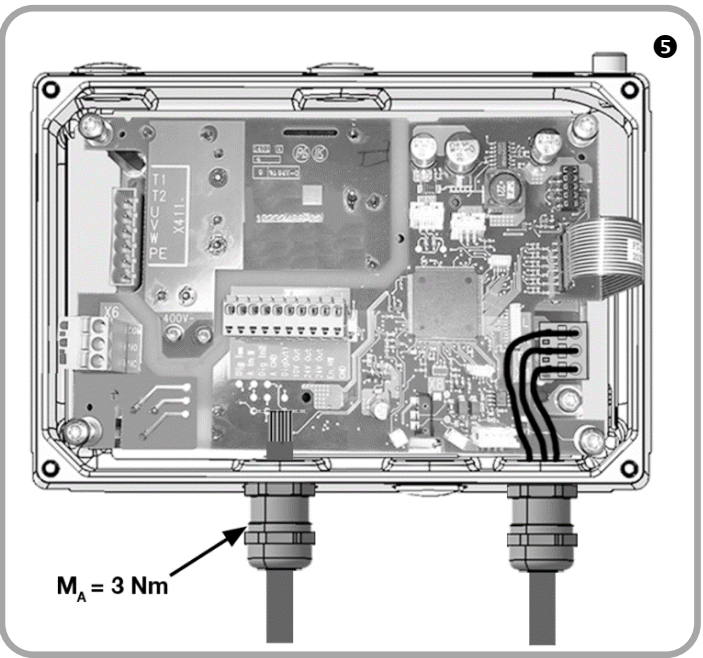
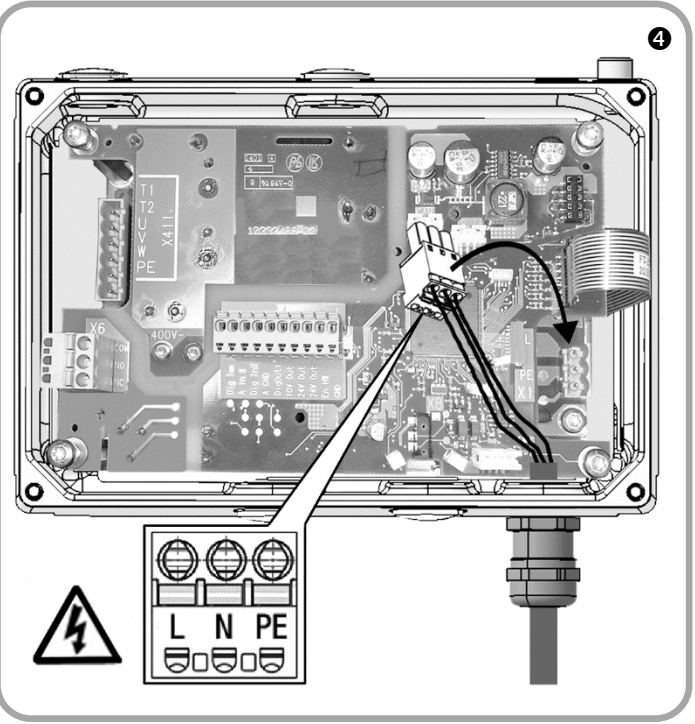
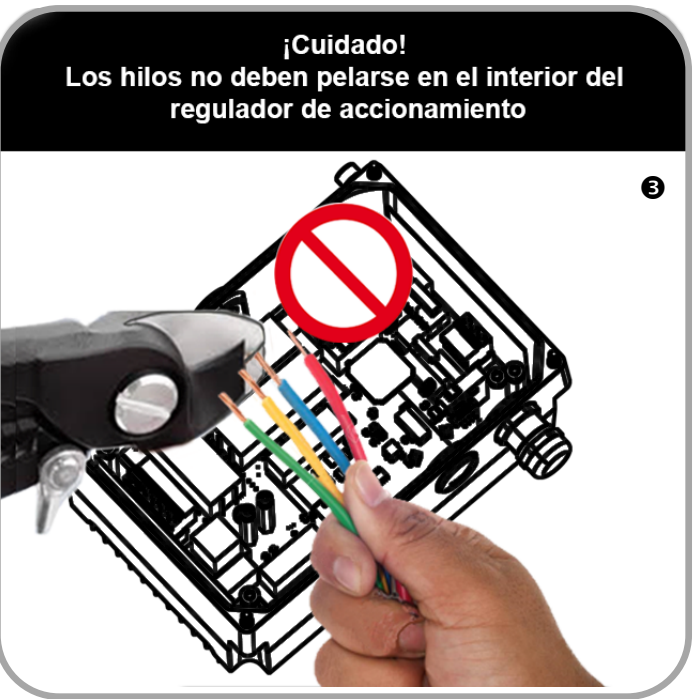
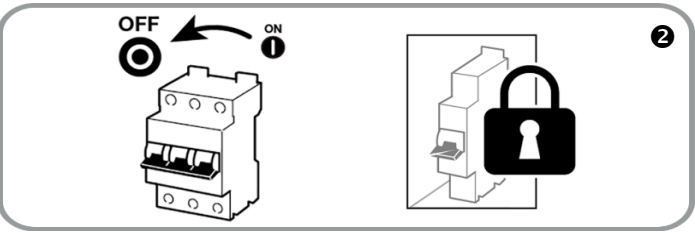
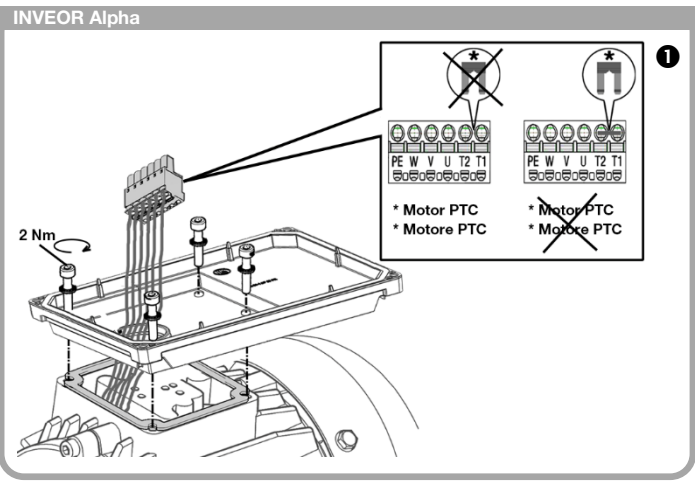
- 1 -

- 2 -

- 3 -



3 | CONEXIÓN DEL EQUIPO





12135345-0001

Guide d'installation rapide

INVEOR Alpha

FR

DOC02850340-0001

Lien direct mode d'emploi

KOSTAL Industrie Elektrik GmbH
An der Bellmerlei 10
58513 Lüdenscheid
Germany
Téléphone : +49 (0)2351 16-0
Fax : + 49 (0)2351 16-2400
info-industrie@kostal.com



Exclusion of liability

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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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Utilisation conforme

Le variateur de vitesse INVEOR Alpha est un appareil de régulation de régime des moteurs à courant alternatif. Ce document doit être lu et compris avant d'installer et d'utiliser l'INVEOR Alpha. Toujours utiliser le variateur de vitesse dans le respect des consignes. L'appareil doit être utilisé uniquement dans la plage de puissance prévue et dans les conditions ambiantes autorisées. Le variateur de vitesse n'est pas prévu pour une utilisation dans des zones à risque d'explosion. La plage de fonctionnement autorisée de tous les composants doit être respectée en toutes circonstances. N'utilisez le produit que conformément à la documentation détaillée (voir https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_drive_controller) et conformément aux normes et directives en vigueur sur le lieu d'utilisation. Les informations fournies dans les données techniques doivent être strictement respectées. Une utilisation incorrecte peut entraîner des dommages à l'appareil et à d'autres biens matériels. Le variateur de vitesse ne doit être utilisé que dans le cadre de l'usage prévu.



INFORMATION IMPORTANTE

L'utilisation de variateurs de vitesse dans un équipement non fixe est considérée comme une condition environnementale extraordinaire et n'est admissible que dans le respect des normes et directives en vigueur dans chaque lieu.

- Ne faites réaliser le montage et le démontage que par un personnel qualifié.
- Ne faites appel qu'à un personnel ayant reçu une formation sur le montage, l'installation, la mise en service et l'utilisation.
- N'effectuez aucune modification sur le variateur de vitesse.
- Respectez les réglementations générales et nationales en matière de sécurité et de prévention des accidents
- Des courants de contact > 3,5 mA peuvent se présenter sur l'INVEOR. Pour cette raison, un conducteur de mise à la terre de protection additionnel avec une section transversale identique à celle du conducteur de mise à la terre de protection initial doit être installé conformément à la norme DIN EN 61800-5-1. Il est possible de connecter un deuxième conducteur de mise à la terre de protection sur la face extérieure de l'appareil. Une vis M6 x 8 (couple M_k= 4,0 Nm) appropriée pour le raccordement est livrée avec l'INVEOR.
- En cas d'utilisation d'appareils 1~ INVEOR, les disjoncteurs FI classiques de type A, également appelés RCD (residual current-operated protective device), sont autorisés pour la protection contre les contacts directs ou indirects !
Il faut alors utiliser un disjoncteur FI sensible à tous les courants (RCD de type B), conformément aux normes DIN VDE 0160 et EN 50178 !

Marquages

Des plaques et des indications sont apposées sur le boîtier du variateur. Ils ne doivent pas être modifiés ni retirés.

Pictogramme	Signification
	Risque d'électrocution et de décharge électrique
	Danger
	Risque de brûlure
	Risque d'électrocution et de décharge électrique. Attendez deux minutes après la mise à l'arrêt (durée de déchargement des condensateurs)
	Prise de terre supplémentaire
	Consulter le mode d'emploi et respecter ses instructions
	Plaque signalétique avec les données techniques les plus importantes et le numéro de série

1 | CONSIGNES DE SÉCURITÉ



DANGER !
DANGER DE MORT PAR ÉLECTROCUTION ET DÉCHARGE ÉLECTRIQUE !
MORT OU BLESSURES GRAVES
Des tensions dangereuses sont présentes dans le variateur de vitesse. Seul un électricien est habilité à ouvrir l'appareil et à y effectuer des travaux. Débranchez toujours le variateur de vitesse de l'alimentation électrique et assurez-vous qu'il ne sera pas remis sous tension pendant le montage, la maintenance et les réparations.
Les bornes suivantes sont susceptibles de transporter des tensions dangereuses même lorsque le moteur est à l'arrêt :

- Bornes de raccordement au réseau X1 : L, N
- Bornes de raccordement au moteur X411 : T1, T2, U, V, W
- Bornes de raccordement X6 : Contacts de relais



DANGER !
DANGER DE MORT PAR ÉLECTROCUTION ET DÉCHARGE ÉLECTRIQUE !
MORT OU BLESSURES GRAVES
Par principe, mettez l'appareil à la terre conformément à DIN EN 61140 ; VDE 0140, NEC et toute autre norme en vigueur.
Le variateur de vitesse doit être mis à la terre conjointement avec le moteur, conformément aux prescriptions. Si ce point n'est pas respecté, cela pourrait entraîner la mort ou des blessures graves.
Les extrémités de câble non utilisées du boîtier de raccordement du moteur doivent être isolées.
Utilisez des disjoncteurs de protection appropriés avec le courant nominal spécifié entre le réseau et le variateur de vitesse.
Remplacez les pièces ou les composants défectueux uniquement par des pièces d'origine



Risque d'électrocution et de décharge électrique.
Attendez deux minutes après la mise à l'arrêt (durée de déchargement des condensateurs)



PRUDENCE !
RISQUE DE BRÛLURE DÛ À DES SURFACES BRÛLANTES !
BRÛLURES GRAVES DE LA PEAU DUES À DES SURFACES BRÛLANTES !
Laissez le radiateur du variateur de vitesse refroidir suffisamment.



DANGER !
DANGER DE MORT EN RAISON DU REDÉMARRAGE DES MOTEURS ET DE PIÈCES MÉCANIQUES EN ROTATION !
MORT OU BLESSURES GRAVES !
Le non-respect des consignes peut provoquer la mort, des blessures graves ou des dommages matériels considérables !
Certains réglages de paramètres et la modification de certains réglages de paramètres pendant le service peuvent avoir pour effet le redémarrage automatique du variateur de vitesse INVEOR après une panne de l'alimentation en courant, ou des modifications non souhaitées du comportement en service.

Surface de montage et environnement immédiat (uniquement pour montage mural)

La surface de montage et son environnement immédiat doivent présenter les caractéristiques suivantes :
Stationnaires, verticaux, plats, difficilement inflammables, ne vibrant pas en permanence.
La surface de montage doit supporter les vis de fixation.

Transport et stockage



Risque de dommages matériels

Risque d'endommagement du variateur de vitesse !
Risque d'endommagement du variateur de vitesse en cas d'exécution inappropriée du transport, du stockage, de l'installation et du montage !
Transportez toujours le variateur de vitesse correctement dans son emballage d'origine sur une palette.
Par principe, stockez toujours le variateur de vitesse de manière appropriée.
Ne faites réaliser l'installation et le montage que par un personnel qualifié.

Manuel d'utilisation complet

Le mode d'emploi détaillé du variateur de vitesse INVEOR Alpha se trouve sur Internet à l'adresse https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_drive_controller

Déclaration de conformité UE

KOSTAL Industrie Elektrik GmbH déclare par la présente que les variateurs de vitesse décrits dans ce document sont conformes aux exigences de base et autres dispositions pertinentes des directives mentionnées.

- Directive 2014/30/UE (compatibilité électromagnétique, CEM)
- Directive 2014/35/EU (mise à disposition sur le marché du matériel électrique destiné à être employé dans certaines limites de tension. En bref : directive basse tension)
- Directive 2011/65/EU (limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques. En bref : directive RoHS)

Une déclaration de conformité UE détaillée peut être consultée sur Internet à l'adresse suivante : <http://www.kostal-industrie-elektrik.com/de-DE/Download/Anriebstechnik>

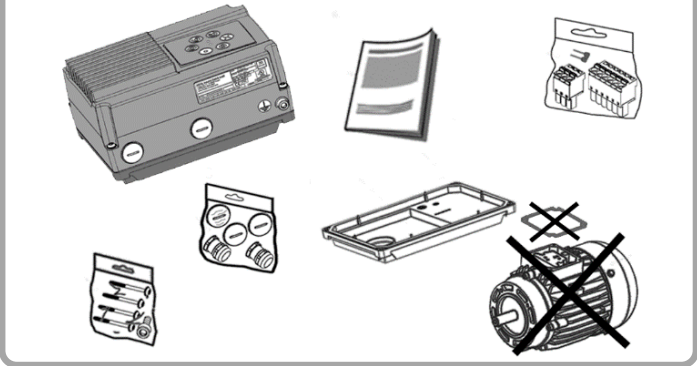
Coordonnées et service après-vente (SAV)

Pour toute question technique, veuillez contacter notre service d'assistance téléphonique.

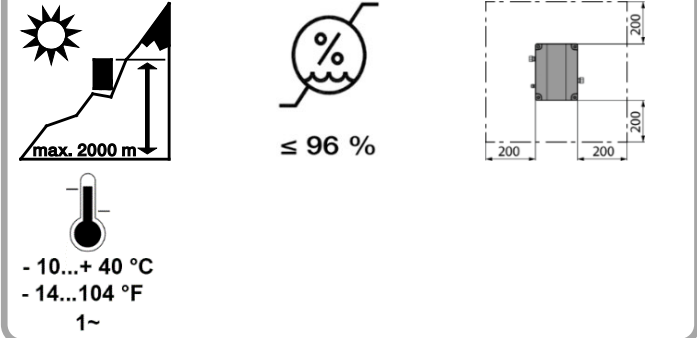
Pays	Téléphone	E-mail
Allemagne et autres pays	+49 (0)2331 80 40-848	INVEOR-service@kostal.com

2 | INSTALLATION

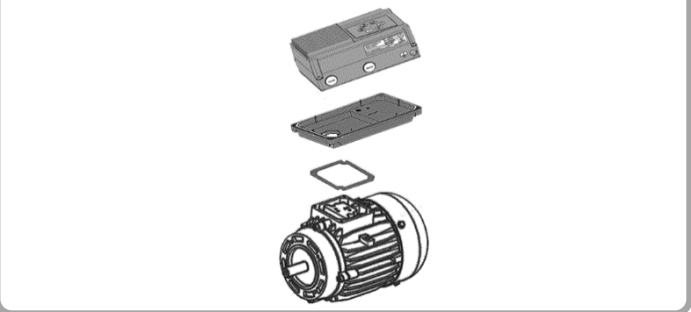
Contenu de la livraison



Lieu de montage



Monter le variateur de vitesse



Montage mural modèle Alpha

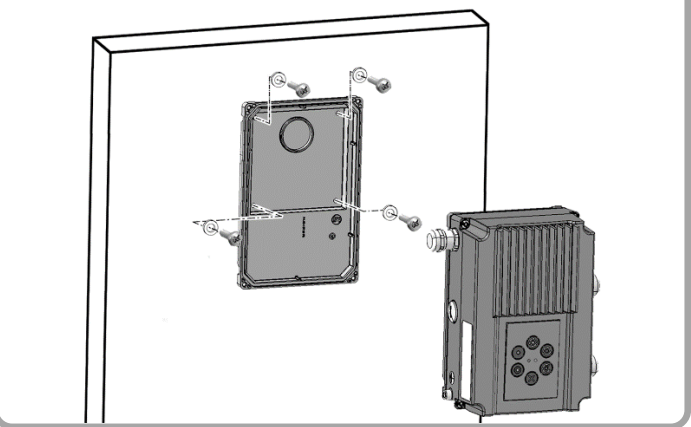
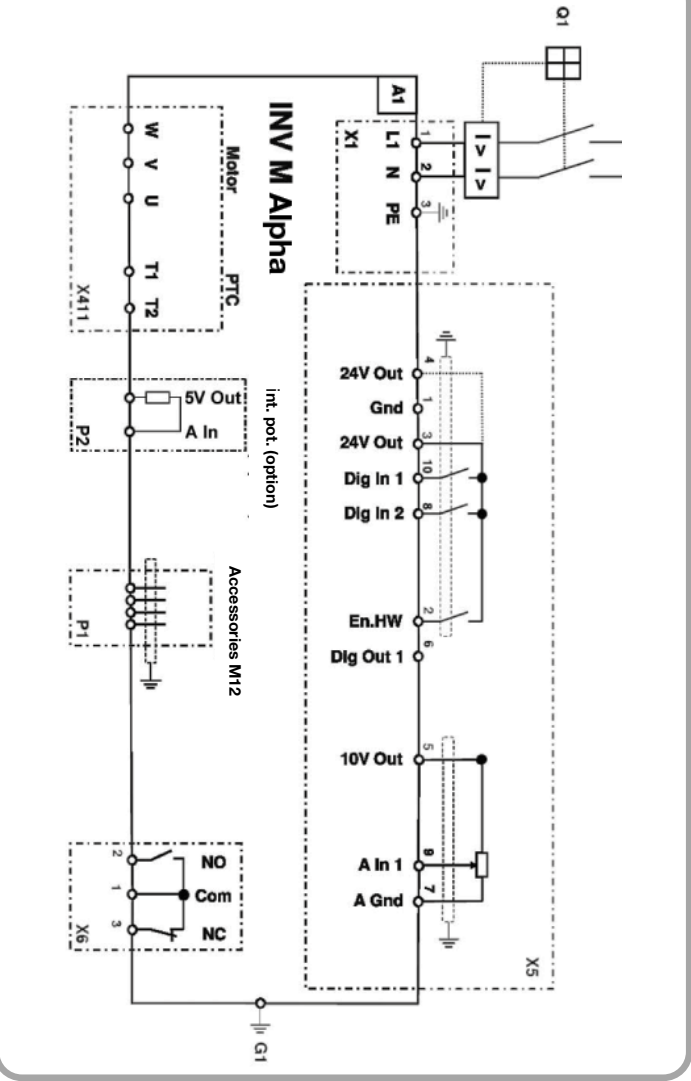
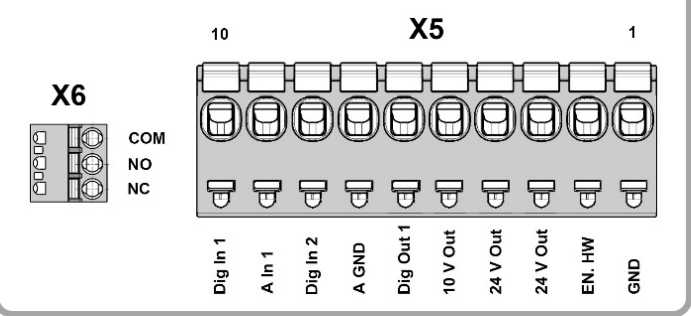


Schéma de raccordement



Bornes de commande



Raccordements de puissance

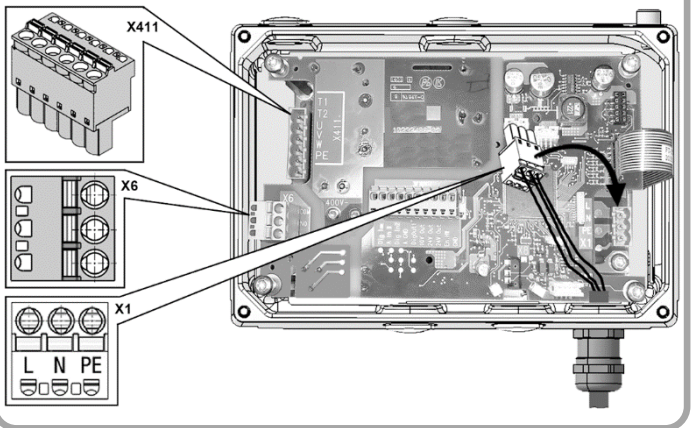
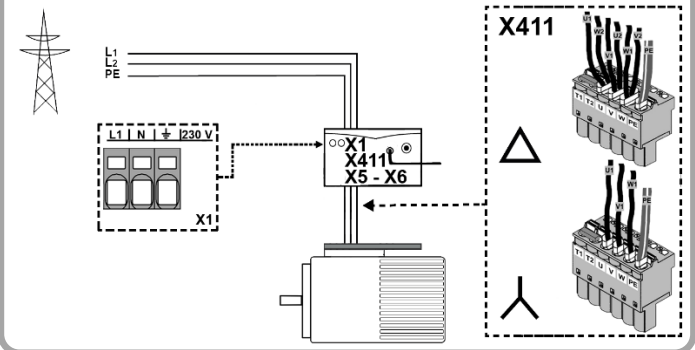
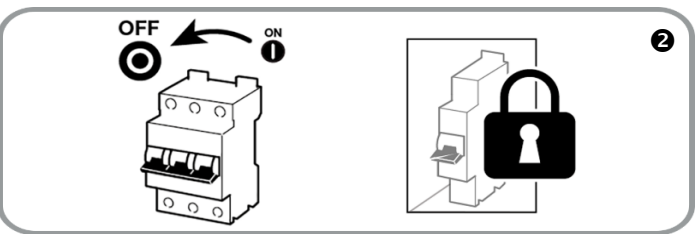
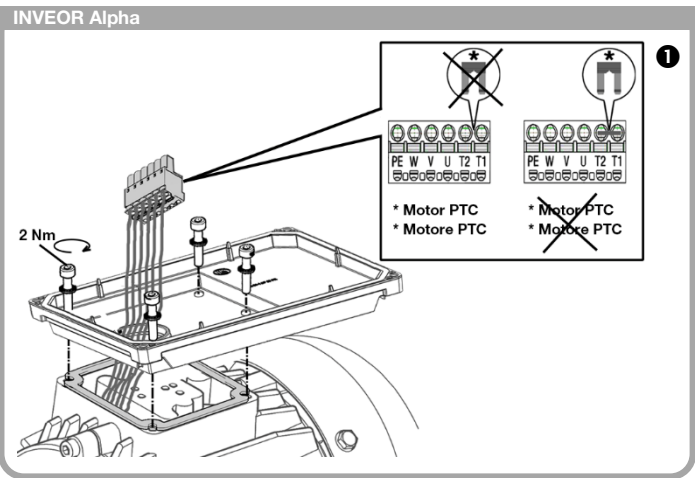


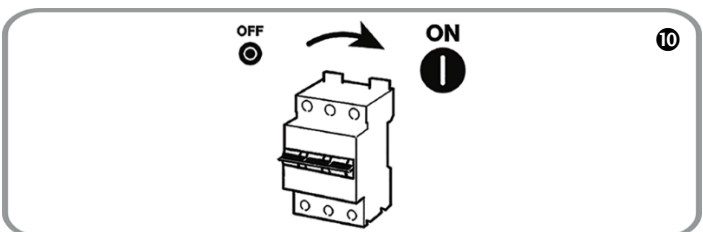
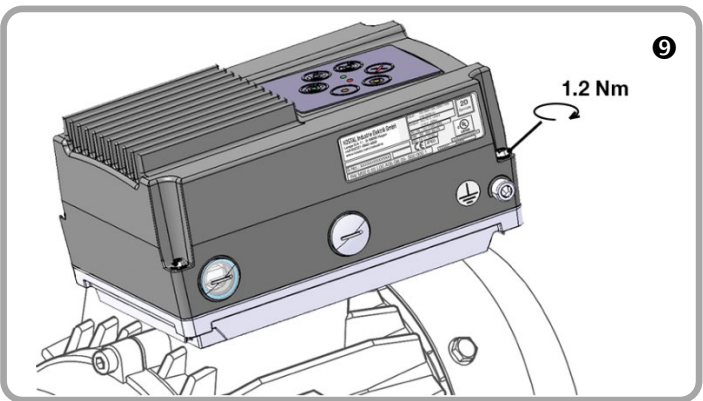
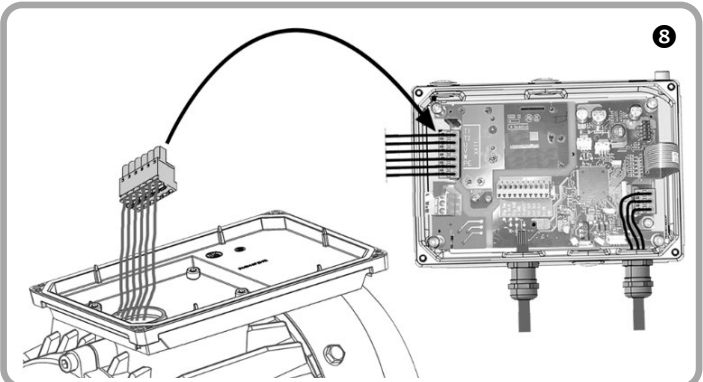
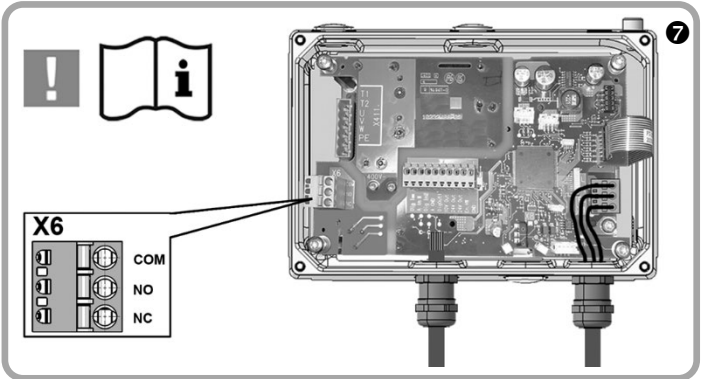
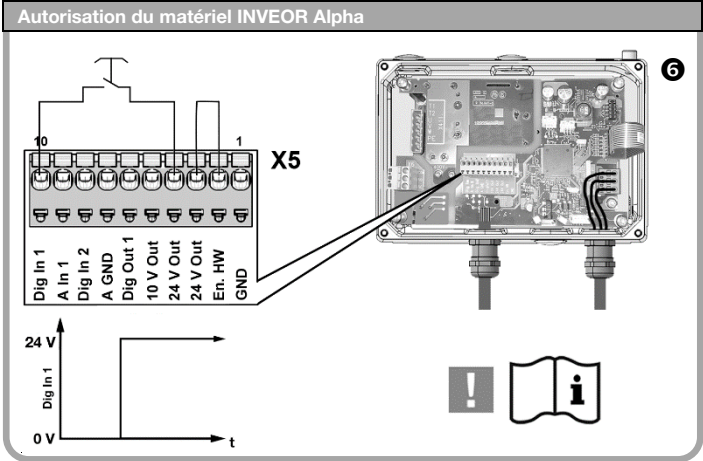
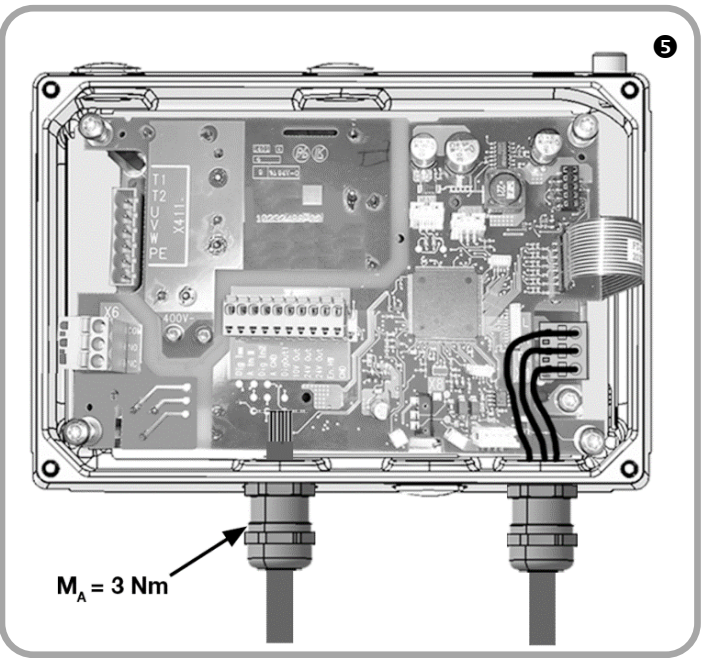
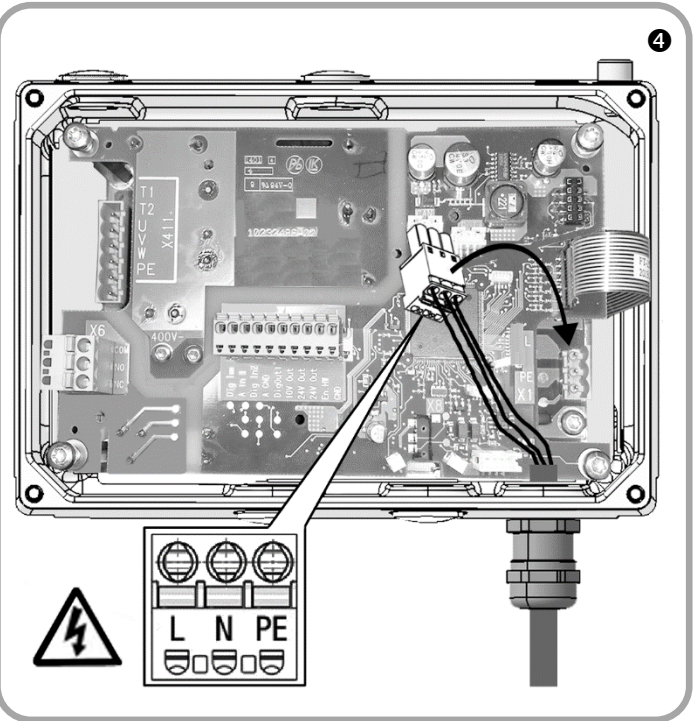
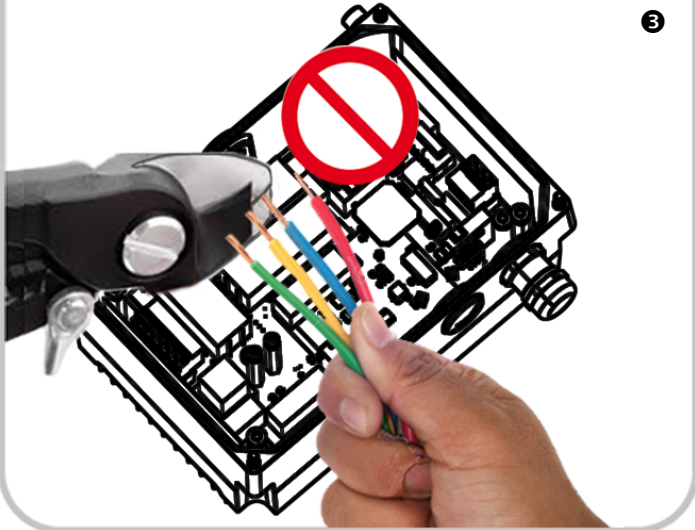
Schéma de raccordement



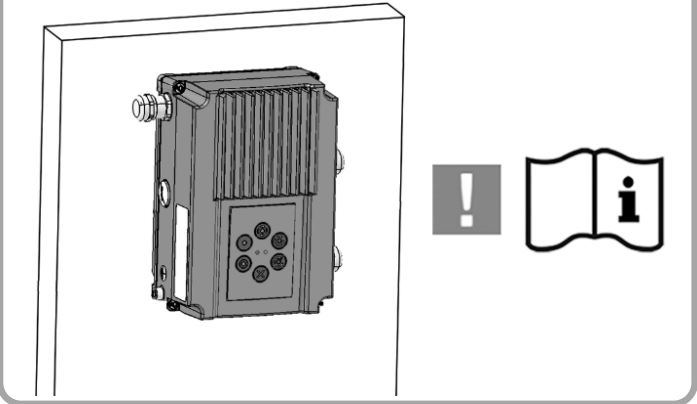
3 | RACCORDEMENT DE L'APPAREIL



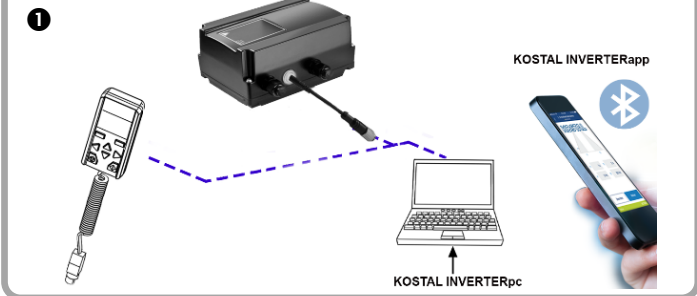
Prudence!
Ne pas dénuder les fils à l'intérieur du variateur



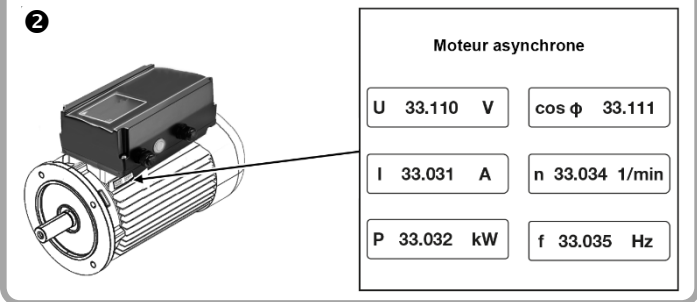
4 | RACCORDEMENT DE L'APPAREIL MONTAGE MURAL



5 | MISE EN SERVICE RAPIDE



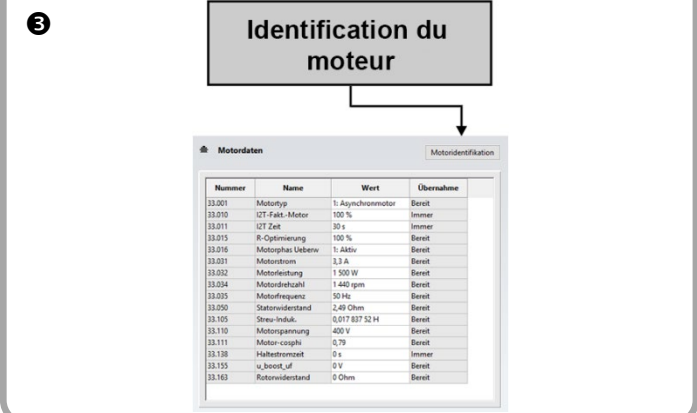
Paramètres / Données moteur



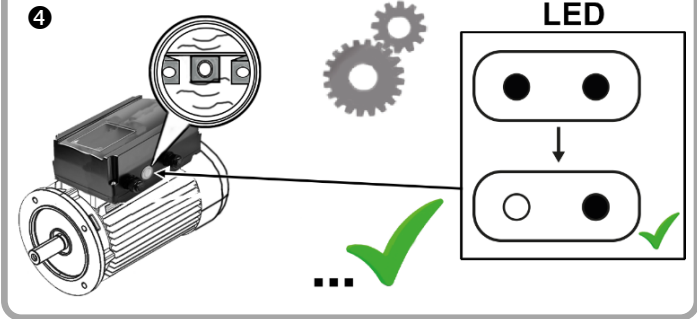
Version du matériel

** (voir représentation graph. ⑥ « Autorisation du matériel INVEOR Alpha »)

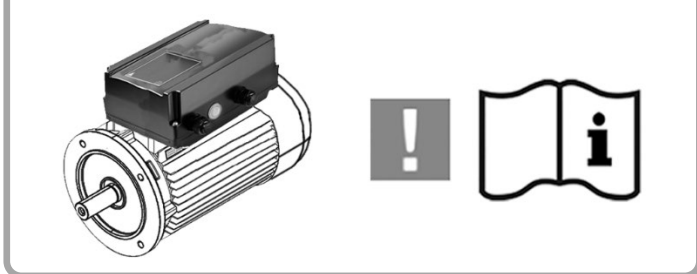
Identification du moteur



Les données moteur sont calculées



6 | MISE EN SERVICE RAPIDE PMSM



INDUSTRIE ELEKTRIK

KOSTAL



12135345-0001

Smart connections.

Краткая инструкция

ИНVEOR Alpha

RU

DOC02850344-0001

Прямая ссылка на руководство по эксплуатации



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Использование по назначению

Регулятор привода INVEOR Alpha — это устройство для регулирования числа оборотов трехфазных электродвигателей. Перед установкой и использованием INVEOR Alpha необходимо изучить данный документ. Используйте регулятор привода только по назначению. Устройство можно использовать только в заданном диапазоне мощностей и при допустимых окружающих условиях. Запрещено использовать регулятор привода во взрывоопасных зонах. Нужно всегда придерживаться разрешенного рабочего диапазона всех компонентов. Эксплуатируйте изделие исключительно согласно данным детальной документации (https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_drive_controller) и действующим местным стандартам и директивам. Обязательно соблюдайте указания по техническим данным. Использование не по назначению может привести к повреждению устройства и других предметов. Регулятор привода должен использоваться только по назначению.

ВАЖНАЯ ИНФОРМАЦИЯ

Использование регулятора привода на нестационарном оборудовании считается исключительным внешним условием и допустимо только в соответствии с местными стандартами и директивами.

■ Монтаж и демонтаж должен проводить только соответствующий квалифицированный персонал.

■ К работе следует допускать только персонал, который прошел обучение по установке, монтажу, вводу в эксплуатацию и обслуживанию устройства.

■ Не вносите изменений в конструкцию регулятора привода.

■ Соблюдайте международные и национальные предписания по технике безопасности

■ В регуляторе привода INVEOR могут возникать токи прикосновения > 3,5 мА. Поэтому в соответствии со стандартом DIN EN 61800-5-1 установите дополнительный провод защитного заземления такого же сечения, что и исходный провод защитного заземления. Присоедините второй провод защитного заземления можно с обратной стороны устройства. В комплект поставки устройства INVEOR входит винт для присоединения M6 x 8 (момент затяжки M_d = 4,0 Н·м).

■ При использовании устройств 1~ INVEOR разрешено использовать обычные устройства дифференциального тока типа A (также называемые RCD — residual current-operated protective device) для защиты от прямого или косвенного прикосновения! Устройство дифференциального тока согласно DIN VDE 0160 и EN 50178 должно быть чувствительным ко всем видам тока (RCD типа B)!

Обозначения

На корпус регулятора привода нанесены ярлыки и обозначения. Данные ярлыки и обозначения нельзя менять или удалять.

Символ	Значение
	Опасность поражения током и электрическим разрядом
	Опасность
	Опасность ожога
	WARNING HOT SURFACE RISK OF BURN
	Опасность поражения током и электрическим разрядом. После выключения подождите две минуты (время разрядки конденсаторов)
	Дополнительное заземление
	Прочитайте и соблюдайте руководство по эксплуатации
	Заводская табличка с важными техническими данными и серийным номером

1 | УКАЗАНИЯ ПО ТЕХНИКЕ БЕЗОПАСНОСТИ

ОПАСНОСТИ!

ОПАСНОСТЬ ПОРАЖЕНИЯ ТОКОМ И ЭЛЕКТРИЧЕСКИМ РАЗРЯДОМ!
ТЯЖЕЛЫЕ ИЛИ СМЕРТЕЛЬНЫЕ ПОВРЕЖДЕНИЯ
Регулятор привода находится под опасным для жизни напряжением. Только электротехнический персонал может открывать устройство и работать с ним.
При монтаже, техническом обслуживании и ремонте необходимо обесточить регулятор привода и защитить его от повторного включения. Указанные ниже клеммы могут находиться под напряжением и после остановки двигателя.

- Клеммы подключения к сети питания X1: L, N
- Клеммы подключения двигателя X411: T1, T2, U, V, W
- Присоединительные клеммы X6: релейные контакты

ОПАСНОСТИ!

ОПАСНОСТЬ ПОРАЖЕНИЯ ТОКОМ И ЭЛЕКТРИЧЕСКИМ РАЗРЯДОМ!
ТЯЖЕЛЫЕ ИЛИ СМЕРТЕЛЬНЫЕ ПОВРЕЖДЕНИЯ
Заземлите устройство согласно DIN EN 61140, VDE 0140, NEC и другим соответствующим стандартам.
Регулятор привода должен быть заземлен вместе с двигателем согласно инструкции. В противном случае можно получить тяжелые или смертельные повреждения.
Открытые концы неиспользуемых проводов в клеммной коробке двигателя необходимо изолировать.
Используйте подходящий линейный защитный автомат с предписанным номинальным током между сетью и регулятором привода.
Поврежденные детали и компоненты заменяйте только на оригинальные.

 Опасность поражения током и электрическим разрядом. После выключения подождите две минуты (время разрядки конденсаторов)

ОСТОРОЖНО!

ОПАСНОСТЬ ПОЛУЧЕНИЯ ОЖОГА ПРИ КОНТАКТЕ С ГОРЯЧИМИ ПОВЕРХНОСТЯМИ!
ОПАСНОСТЬ ПОЛУЧЕНИЯ СЕРЬЕЗНЫХ ОЖОГОВ ПРИ КОНТАКТЕ С ГОРЯЧИМИ ПОВЕРХНОСТЯМИ!
Подождите, пока радиатор регулятора привода не остынет.

ОПАСНОСТИ!

ОПАСНОСТЬ ДЛЯ ЖИЗНИ ПРИ ВНЕЗАПНОМ ЗАПУСКЕ ДВИГАТЕЛЕЙ И ИЗ-ЗА ВРАЩАЮЩИХСЯ МЕХАНИЧЕСКИХ ДЕТАЛЕЙ!
ТЯЖЕЛЫЕ ИЛИ СМЕРТЕЛЬНЫЕ ПОВРЕЖДЕНИЯ
Несоблюдение требований может привести к тяжелым повреждениям, летальному исходу или существенному материальному ущербу!
Определенные настройки параметров и изменение настроек параметров во время работы могут привести к тому, что после сбоя электропитания регулятор привода INVEOR снова автоматически запустится или возникнут нежелательные изменения в режиме его работы.

Монтажная площадка и окружающие условия (при установке на стену)

Монтажная площадка и область вокруг нее должны быть: неподвижными, вертикальными, ровными, трудно воспламеняющимися, невибрирующими. Монтажная площадка должна обеспечить опору для крепежных винтов.

Транспортировка и хранение

Возможен материальный ущерб

Опасность повреждения регулятора привода!
Опасность повреждения регулятора привода из-за ненадлежащей транспортировки, хранения, установки и монтажа!
Транспортируйте регулятор привода надлежащим образом в оригинальной упаковке на поддоне.
Храните регулятор привода надлежащим образом.
Монтаж и установку должен проводить только квалифицированный персонал.

Полное руководство по эксплуатации

Подробное руководство по эксплуатации регулятора привода INVEOR Alpha см. на сайте https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_drive_controller.

Декларация соответствия нормам ЕС

Настоящим компания KOSTAL Industrie Elektrik GmbH заявляет, что описанный в данном документе регулятор привода соответствует основным требованиям и другим актуальным положениям перечисленных ниже директив.

- Директива 2014/30/EC (электромагнитная совместимость)
- Директива 2014/35/EC (подготовка электрооборудования для использования в рамках установленного предельного напряжения — коротко: директива о низковольтном оборудовании)
- Директива 2011/65/EC (ограничение использования вредных веществ в электрических и электронных устройствах — коротко: директива RoHS)

Подробную декларацию соответствия нормам ЕС см. на сайте <http://www.kostal-industrie-elektrik.com/de-DE/Download/Antriebstchnik>

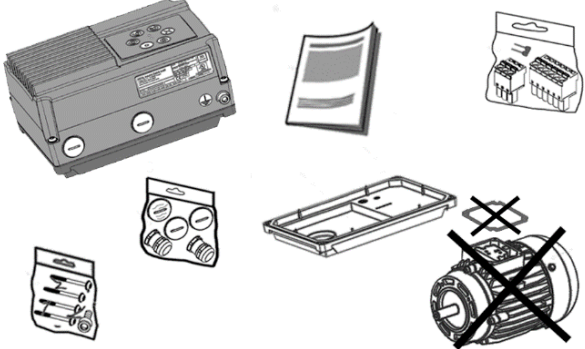
Контакты и сервисное обслуживание

По техническим вопросам обращайтесь на горячую линию сервисной службы.

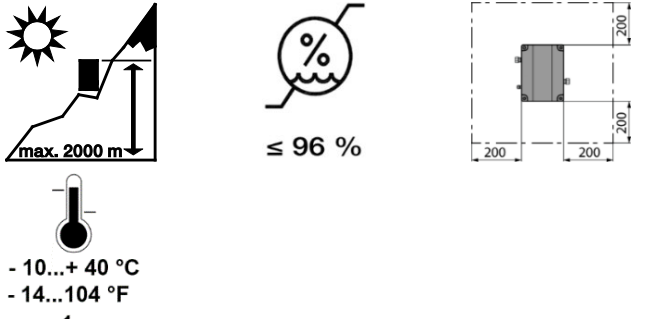
Страна	Телефон	Эл. почта
Германия и другие страны	+49 (0)2331 80 40-848	INVEOR-service@kostal.com

2 | УСТАНОВКА

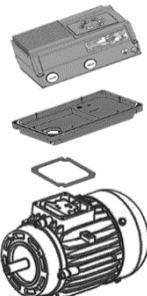
Комплект поставки



Место монтажа



Монтаж регулятора привода



Установка на стену, типоразмер Alpha

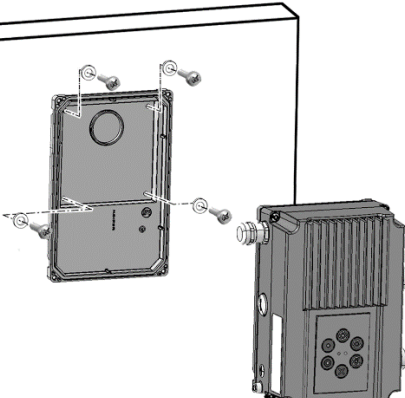
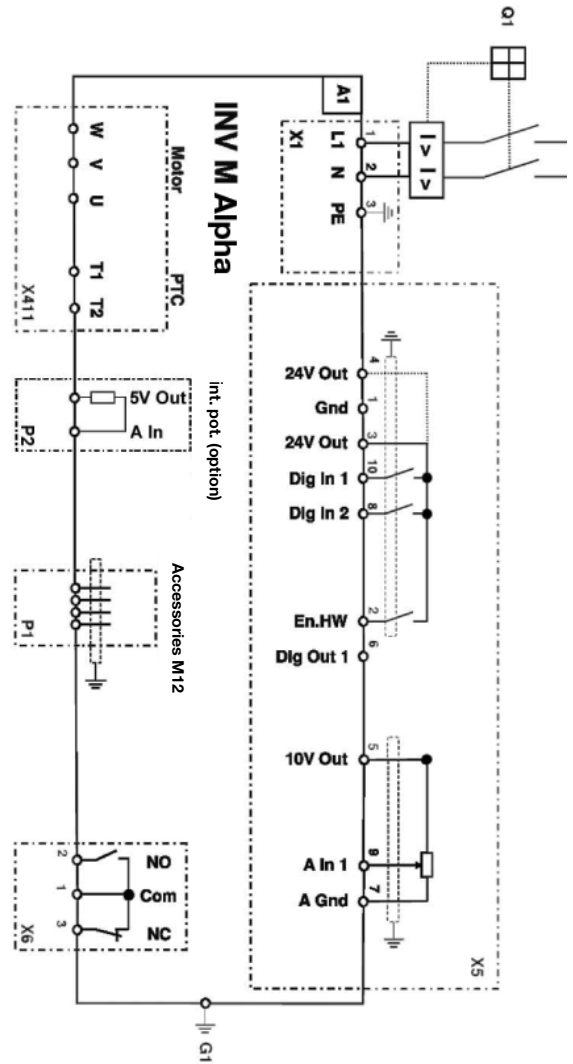
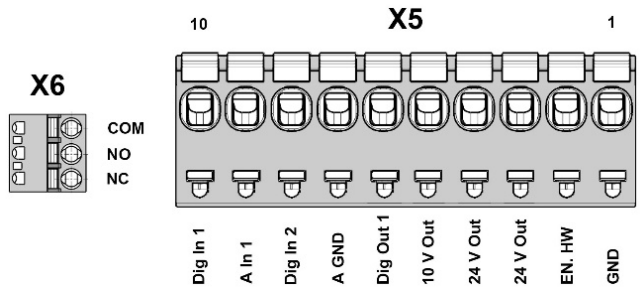


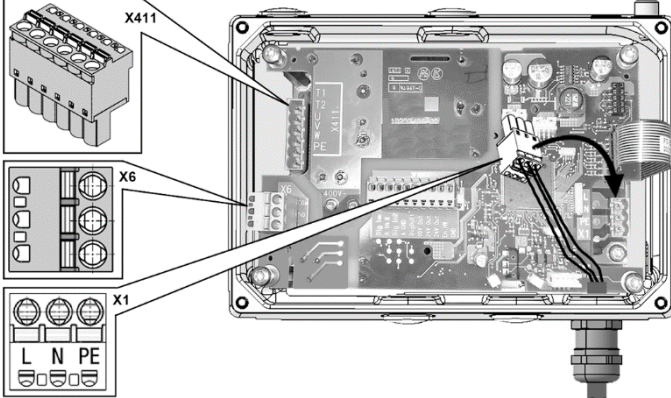
Схема соединений



Присоединения для линий управления



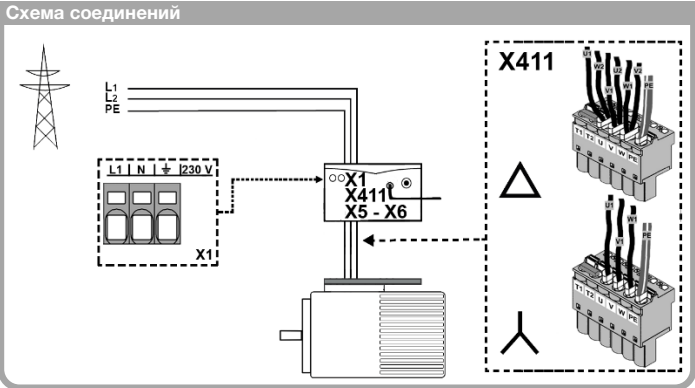
Присоединения для сети питания



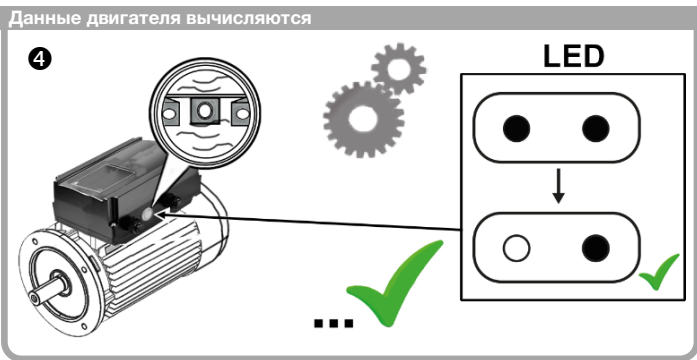
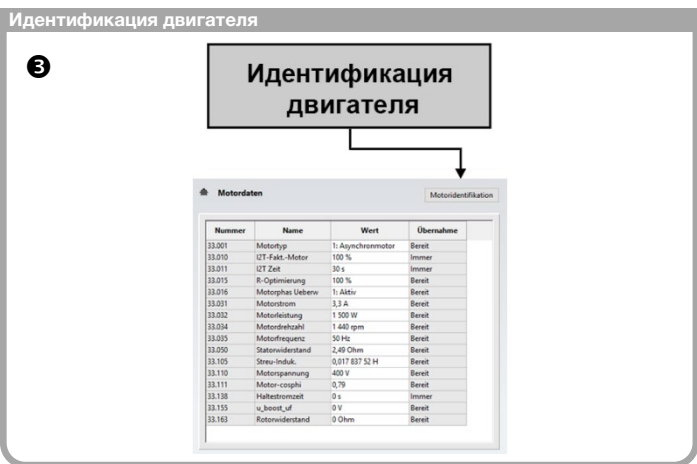
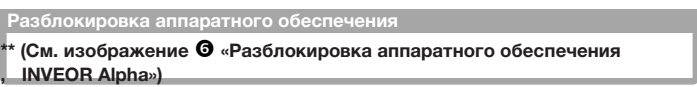
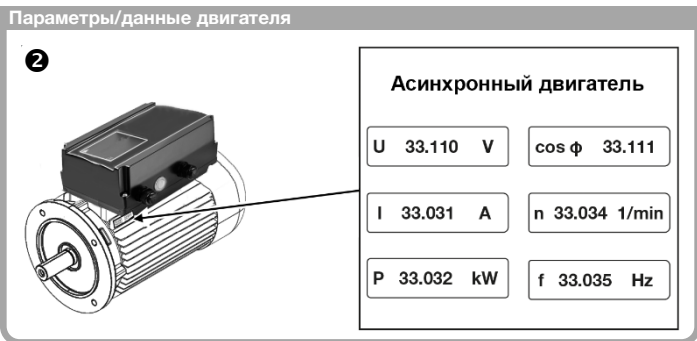
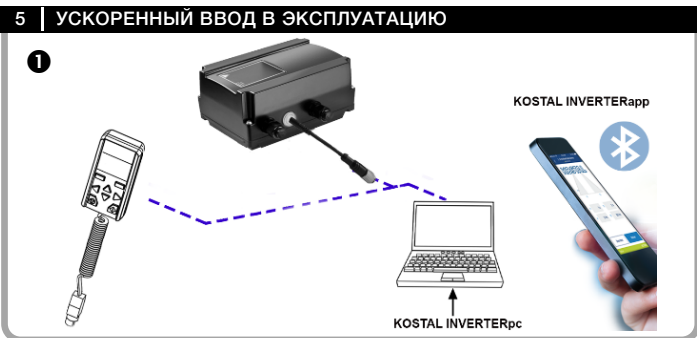
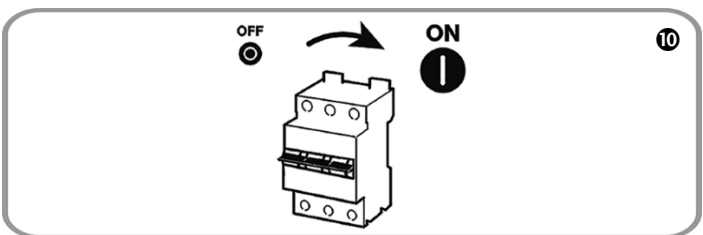
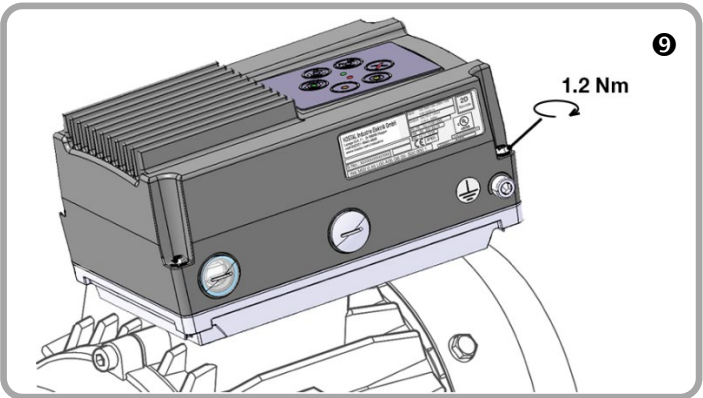
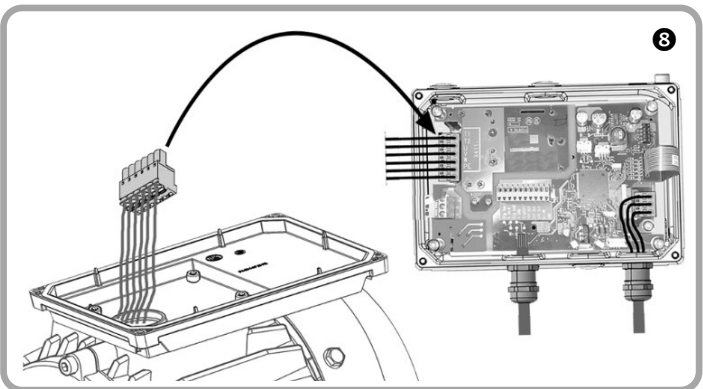
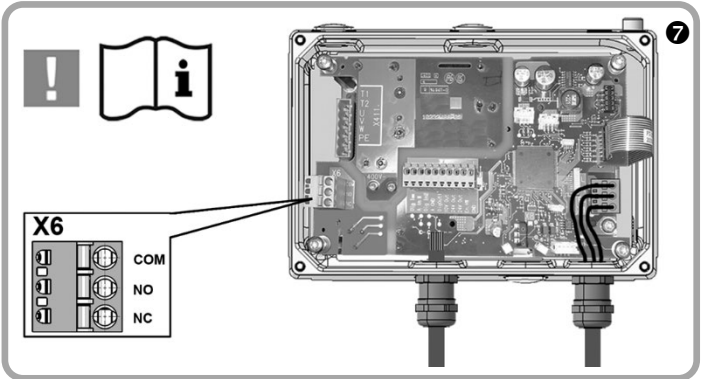
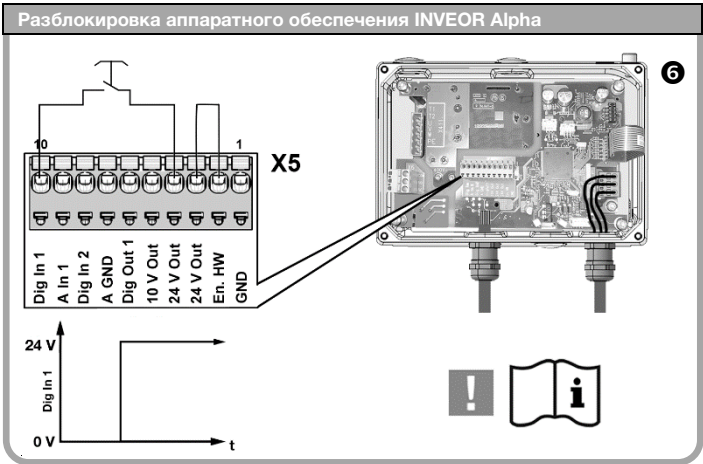
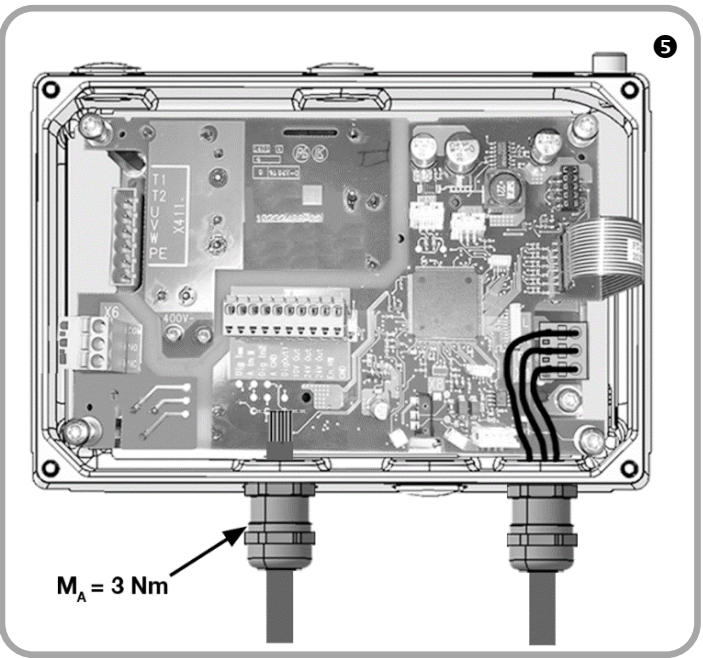
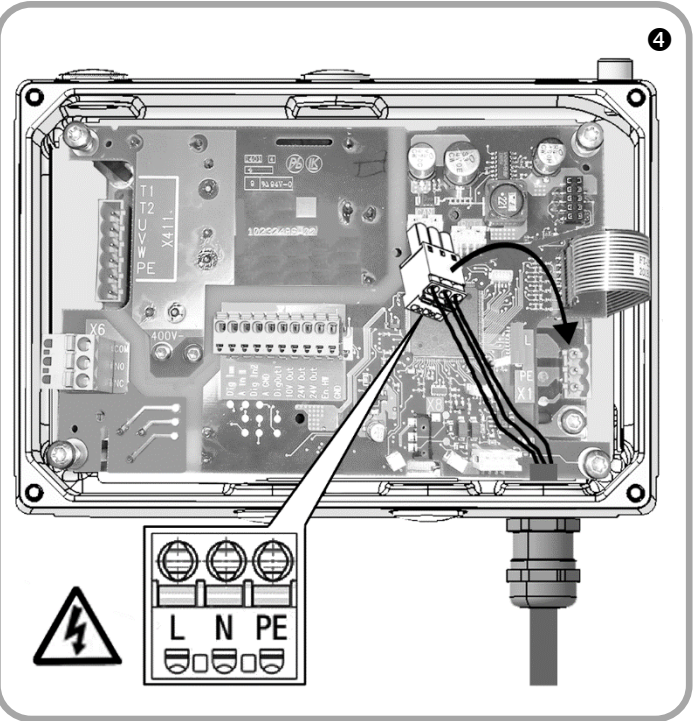
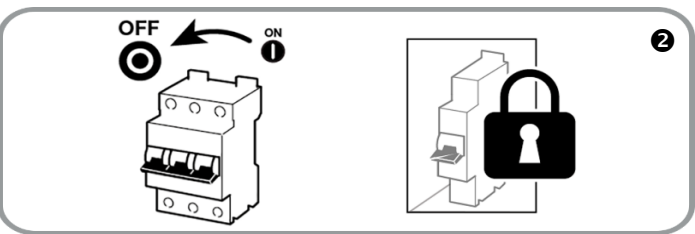
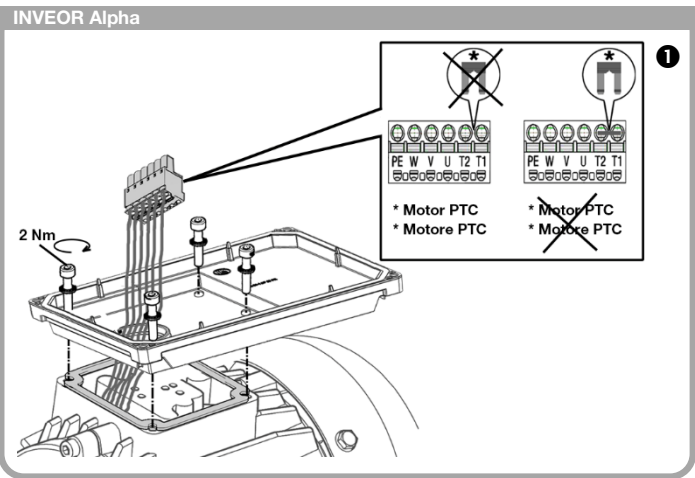
- 1 -

- 2 -

- 3 -



3 | ПОДКЛЮЧЕНИЕ УСТРОЙСТВА





12135345-0001

Özet kılavuz

INVEOR Alpha

TR

DOC02850345-0001

İşletim kılavuzuna direkt bağlantı

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Amacına uygun kullanım

INVEOR Alpha sürücü denetleyici, üç fazlı motorların devir sayısı kontrolüne yönelik bir cihazdır. INVEOR Alpha'nın kurulumunu yapmadan ve kullanmadan önce, bu belge okunmuş ve anlaşılmış olmalıdır. Sürücü denetleyiciyi temel olarak amacına uygun şekilde kullanın. Cihaz yalnızca öngörülen güç aralığı dahilinde ve izin verilen ortam koşullarında kullanılabilir. Sürücü denetleyici, patlama tehlikesi olan alanlarda kullanım için onaylanmamıştır. Tüm bileşenlerin izin verilen çalışma aralığına her zaman uyulmalıdır. Ürünü sadece ayrıntılı belgelerdeki bilgilere uygun olarak (https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_drive_controller) ve yerel olarak geçerli standartlara ve direktiflere uygun olarak kullanın. Teknik verilerde belirtilen bilgilere mutlaka uyulmalıdır. Usulüne uygun olmayan kullanım durumunda, cihazda ve diğer maddi değerlerde hasarlar oluşabilir. Sürücü denetleyici yalnızca öngörülen kullanım amacı için kullanılabilir.

ÖNEMLİ BİLGİ

- Sürücü sabit olmayan ekipmanlarda kullanılması, olağan dışı bir çevre koşulu olarak kabul edilir ve sadece yerel olarak geçerli standartlara ve direktiflere uygun olarak kullanılmasına izin verilir.
- Montaj ve sökme işlerini sadece uygun şekilde kalifiye personele yaptırın.
- Sadece kurulum, tesisat, işleme alma ve kullanım konusunda eğitilmiş personel kullanın.
- Sürücüde herhangi bir değişiklik yapmayın.
- Genel ve ulusal, güvenlik ve kaza önleme yönetmeliklerine uyun
- INVEOR sürücü denetleyicide > 3.5 mA temas akımları ortaya çıkabilir. Bu nedenle, DIN EN 61800-5-1 standardı uyarınca, orijinal koruyucu topraklama iletkeni ile aynı kesite sahip ilave bir koruyucu topraklama iletkeni takın. İkinci bir koruyucu topraklama iletkeni bağlama olanağı, cihazın dış tarafında bulunmaktadır. INVEOR'un teslimat kapsamında bağlantı için uygun bir M6 x 8 vida (sıkma torku M_A = 4,0 Nm) bulunmaktadır.
- 1- INVEOR cihazlar kullanıldığında, doğrudan veya dolaylı temasa karşı korunma için, RCD (artık akımla çalışan koruyucu düzenekler) olarak da bilinen geleneksel Tip A kaçak akım koruma şalterlerinin kullanılmasına izin verilir!
DIN VDE 0160 ve EN 50178 standartları uyarınca, kaçak akım koruma şalteri, tüm akımlara karşı duyarlı bir kaçak akım koruma şalteri (RCD Tip B) olmalıdır!

İşaretlemler

Sürücü gövdesi üzerine etiketler ve işaretlemler yerleştirilmiştir. Bu etiket ve işaretlemler değiştirilmemeli ya da çıkarılmamalıdır.

Sembol	Anlamı
	Elektrik çarpması ve elektrik deşarjı nedeniyle tehlike
	Tehlike
	Yanma tehlikesi
	Elektrik çarpması ve elektrik deşarjı nedeniyle tehlike. Cihazı kapattıktan sonra iki dakika bekleyin (kondansatörlerin deşarj süresi)
	İlave topraklama bağlantısı
	İşletim kılavuzunu dikkate alın ve okuyun
	En önemli teknik verilerin ve seri numarasının bulunduğu tip etiketi

1 | GÜVENLİK BİLGİLERİ

TEHLİKE!
ELEKTRİK ÇARPMASI VE ELEKTRİKSEL DEŞARJ NEDENİYLE ÖLÜM TEHLİKESİ!
ÖLÜM VEYA AĞIR YARALANMALAR
Sürücü denetleyici içerisinde ölümcül gerilimler bulunur. Sadece bir uzman elektrikçi cihazı açabilir ve cihazda çalışabilir. Montaj, bakım ve onarım çalışmaları sırasında daima sürücü denetleyicinin gerilimini kesin ve tekrar açılmaya karşı emniyete alın. Aşağıdaki terminallerde, motor durur haldeyken bile tehlikeli gerilimler bulunabilir:

- X1 şebeke bağlantı terminalleri: L, N
- X411 motor bağlantı terminalleri: T1, T2, U, V, W
- X6 bağlantı terminalleri: Röle kontakları

TEHLİKE!
ELEKTRİK ÇARPMASI VE ELEKTRİKSEL DEŞARJ NEDENİYLE ÖLÜM TEHLİKESİ!
ÖLÜM VEYA AĞIR YARALANMALAR
Cihazı temel olarak DIN EN 61140; VDE 0140; NEC ve diğer ilgili standartlara göre topraklayın. Sürücü denetleyici, kurallara göre motorla birlikte topraklanmalıdır. Aksi takdirde, ölüm veya ağır yaralanmalara neden olan sonuçlar ortaya çıkabilir. Motor bağlantı kutusundaki kullanılmayan açık kablo uçları, izole edilmelidir. Şebeke ile sürücü denetleyici arasında, belirtilen nominal akıma sahip uygun devre kesici kullanın. Hasarlı parçaları veya bileşenleri prensip olarak sadece orijinal parçalarla değiştirin.

Elektrik çarpması ve elektrik deşarjı nedeniyle tehlike. Cihazı kapattıktan sonra iki dakika bekleyin (kondansatörlerin deşarj süresi)

DIKKAT!
SICAK YÜZEYLER NEDENİYLE YANIK TEHLİKESİ!
SICAK YÜZEYLER NEDENİYLE CİLTTE AĞIR YANIKLAR MEYDANA GELEBİLİR!
Sürücü denetleyicinin soğutma elemanını yeterince soğutmaya bırakın.

TEHLİKE!
YENİDEN ÇALIŞMAYA BAŞLAYAN MOTORLAR VE DÖNEN MEKANİK PARÇALAR NEDENİYLE ÖLÜM TEHLİKESİ!
ÖLÜM VEYA AĞIR YARALANMALAR!
Bu uyarının dikkate alınmaması, ölüme, ağır yaralanmalara veya ciddi maddi hasarlara neden olabilir! Belirli parametre ayarları ve işletim sırasında parametre ayarlarının değiştirilmesi, besleme geriliminde meydana gelen bir kesintiden sonra sürücü denetleyici INVEOR'un otomatik olarak yeniden çalışmaya başlamasına veya işletim karakteristiğine istenmeyen değişiklikler oluşmasına yol açabilir.

Montaj yüzeyi ve yakın çevresi (sadece duvar montajında)

Montaj yüzeyi ve yakın çevresi, aşağıdaki özelliklere sahip olmalıdır: Sabit, dikey, düz, kolay tutuşmayan, kalıcı titreşimsiz. Montaj yüzeyi, sabitleme vidaları için destek sunmalıdır.

Taşıma ve depolama

Maddi hasarlar oluşabilir
Sürücü denetleyicinin hasar görme tehlikesi!
Doğru şekilde yapılmayan taşıma, depolama, kurulum ve montaj nedeniyle, sürücü denetleyicinin hasar görme tehlikesi!
Genel olarak sürücü denetleyiciyi bir palet üzerindeki orijinal ambalajı içerisinde, doğru şekilde taşıyın. Prensip olarak sürücü denetleyiciyi tekniğine uygun şekilde depolayın. Kurulum ve montaj işlerini sadece uygun şekilde kalifiye personele yaptırın.

Tam işletim kılavuzu

INVEOR Alpha sürücü denetleyici ile ilgili ayrıntılı bir işletim kılavuzunu, internette https://www.kostal-industrie-elektrik.com/INVEOR_M_alpha_drive_controller adresinde bulabilirsiniz.

AB Uygunluk Beyanı

İşbu belgeyle, KOSTAL Solar Electric GmbH firması, bu belgede tanımlanan sürücü denetleyicilerin aşağıda belirtilen direktiflerin temel gerekliliklerine ve diğer ilgili hükümlerine uygun olduğunu beyan eder.

- 2014/30/AB Direktifi (Elektromanyetik Uyumluluk, EMU)
- 2014/35/AB Direktifi (Belirli gerilim sınırları dahilinde kullanılmak üzere tasarlanmış elektrikli teçhizatların piyasaya arzı - kısaca: Alçak Gerilim Direktifi)
- 2011/65/AB Direktifi (Elektrikli ve elektronik cihazlarda belirli tehlikeli maddelerin kullanımının kısıtlanmasına ilişkin yönetmelik – kısaca: RoHS Direktifi)

Ayrıntılı bir AB Uygunluk Beyanı'nı internette şu adreste bulabilirsiniz
<http://www.kostal-industrie-elektrik.com/de-DE/Download/Antriebsstechnik>

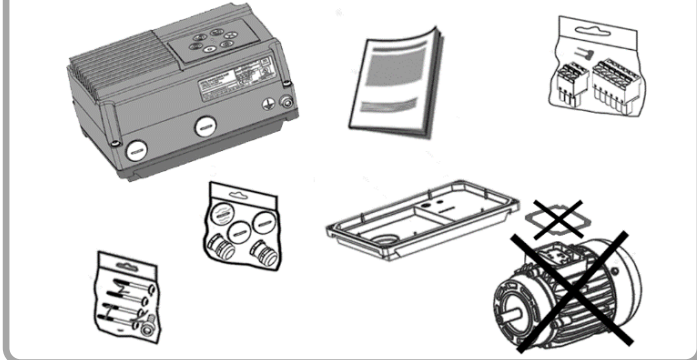
İletişim bilgileri ve servis

Teknik sorularınızda, lütfen Servis Destek Hattımıza başvurun.

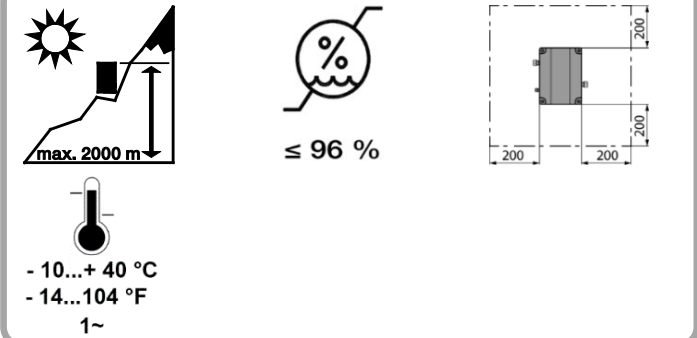
Ülke	Telefon	E-posta
Almanya ve diğer ülkeler	+49 (0)2331 80 40-848	INVEOR-service@kostal.com

2 | KURULUM

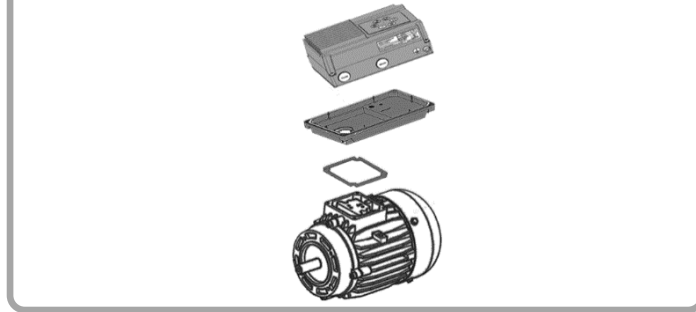
Teslimat kapsamı



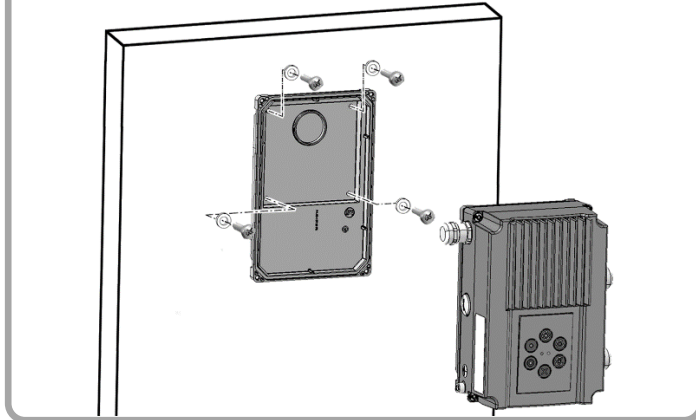
Montaj yeri



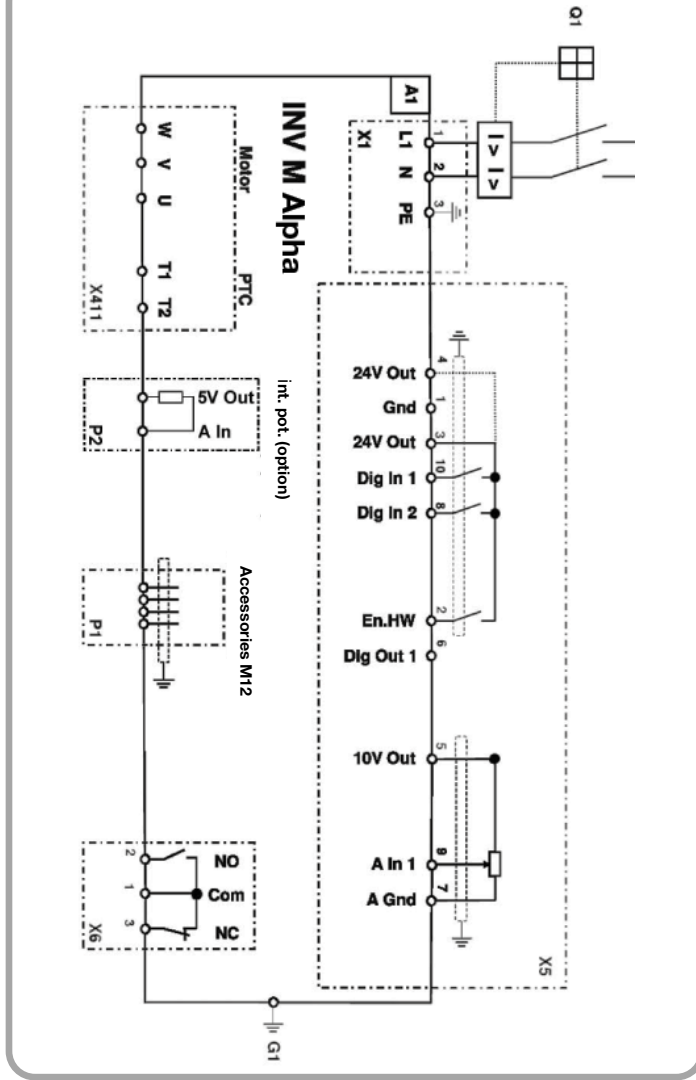
Sürücü denetleyicinin monte edilmesi



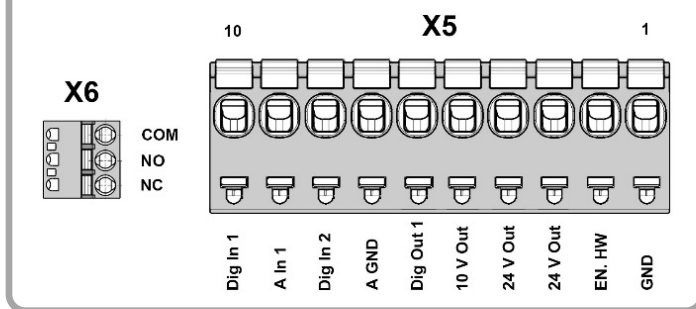
Boyut Alpha duvar montajı



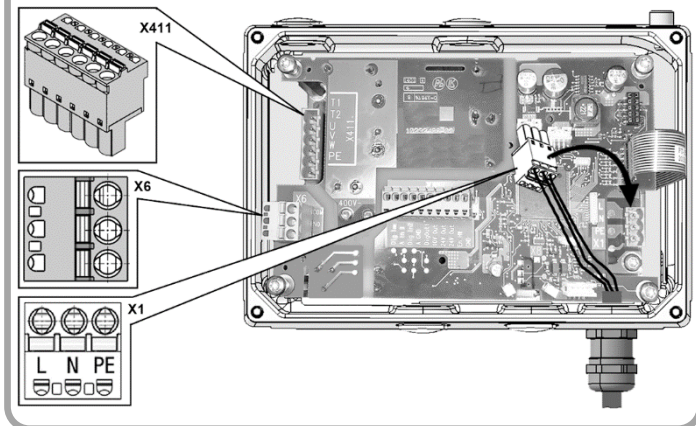
Bağlantı şeması

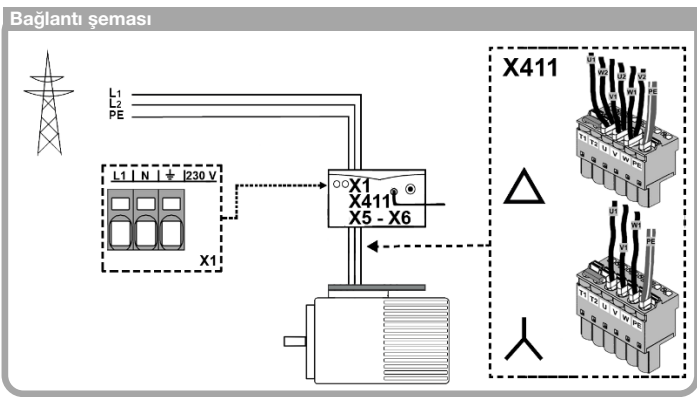


Kontrol bağlantıları

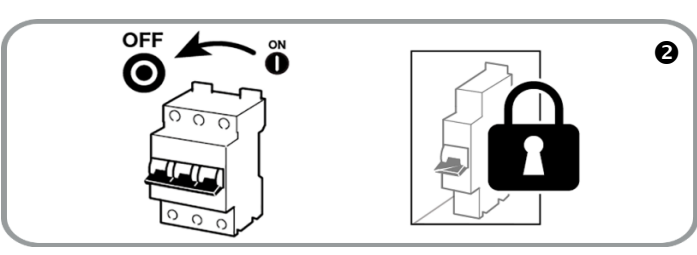
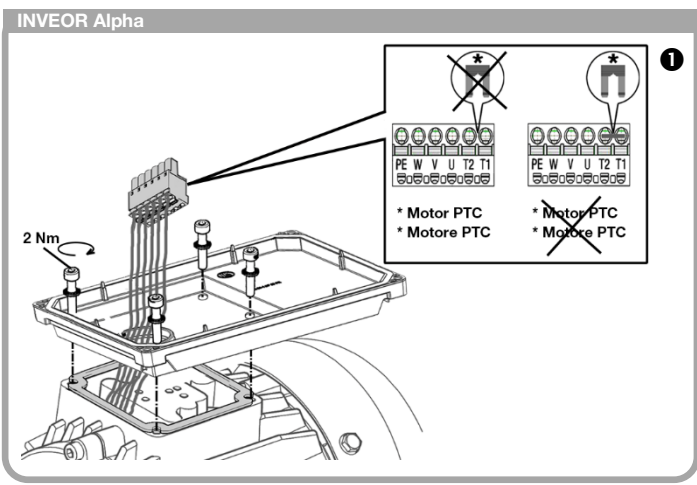


Güç bağlantıları

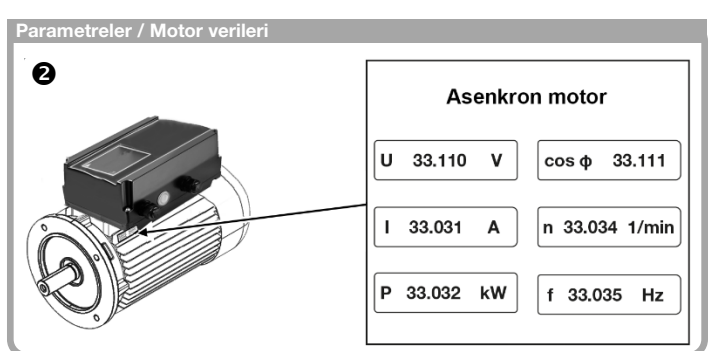
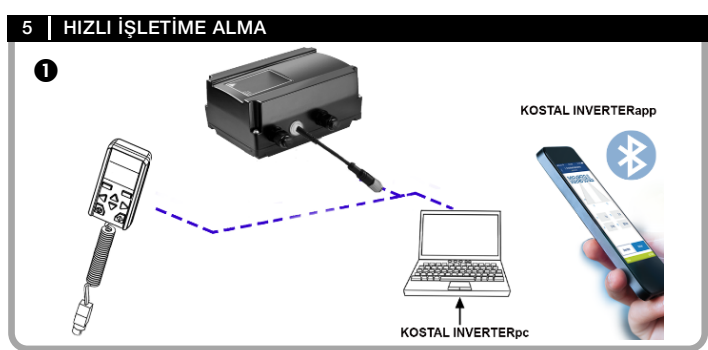
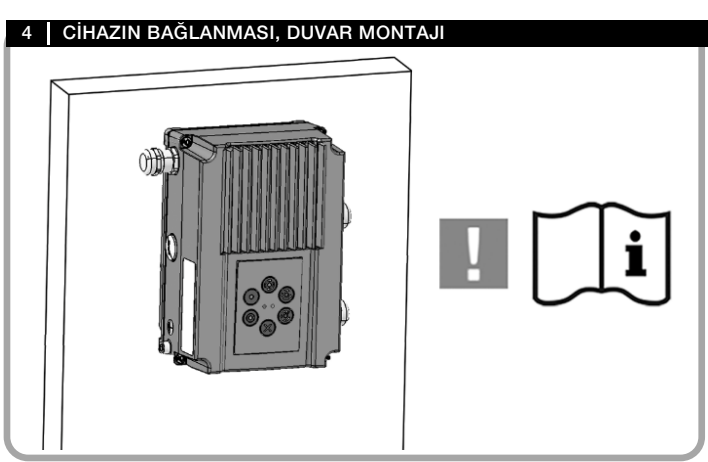
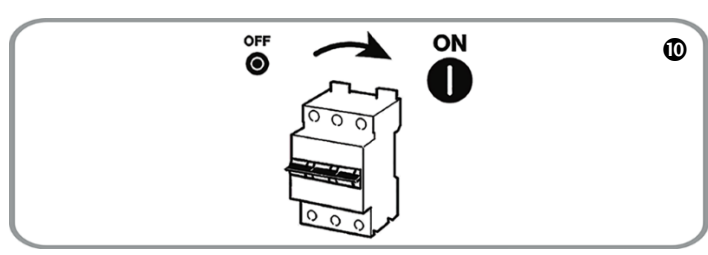
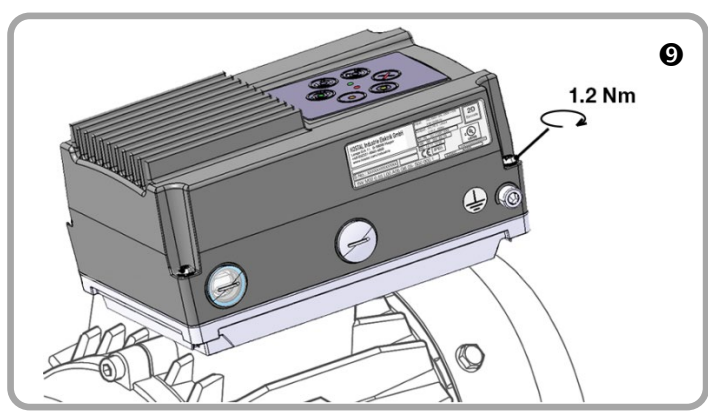
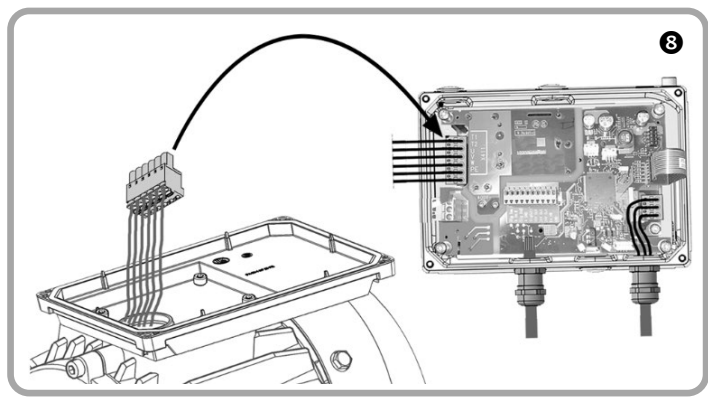
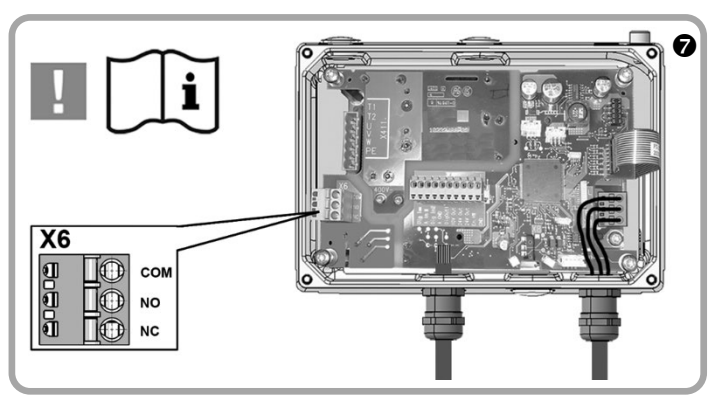
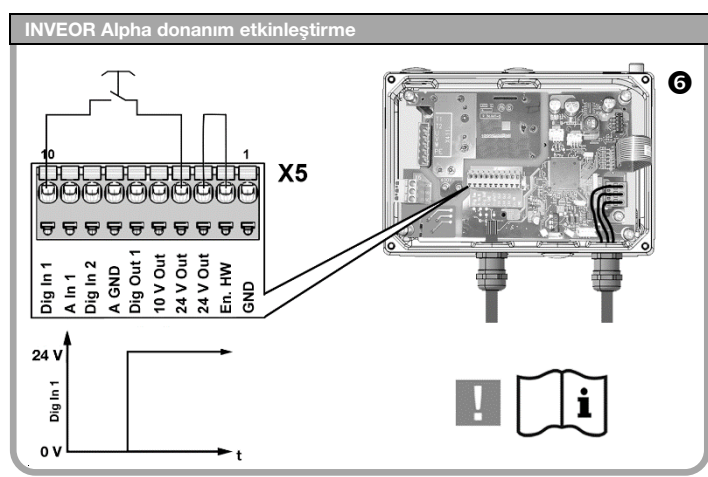
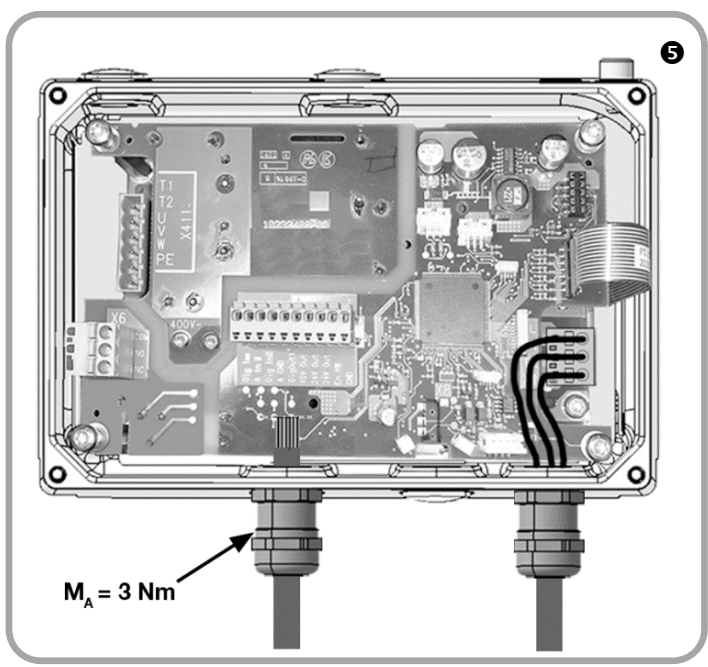
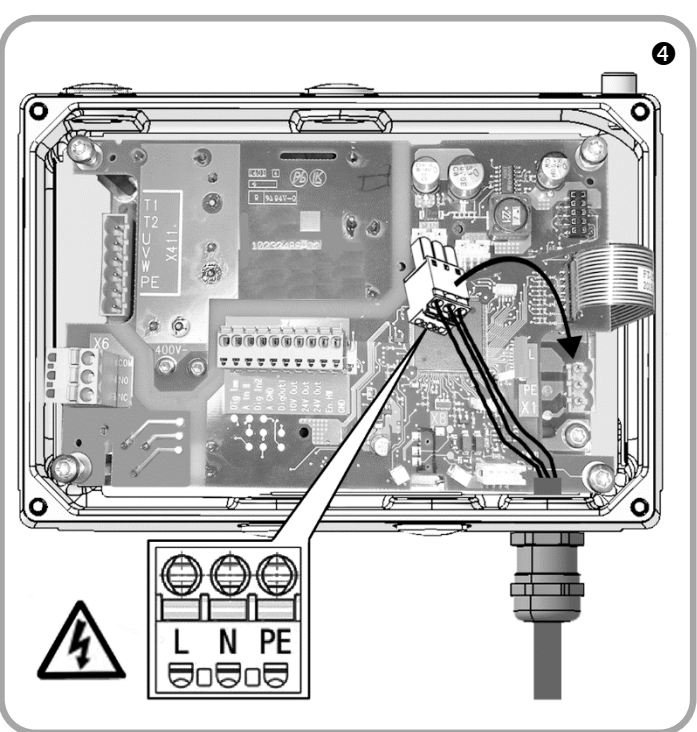
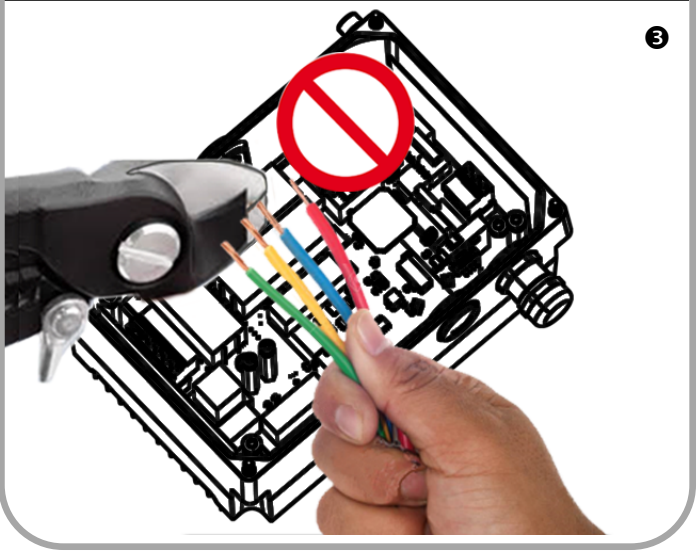




3 | CİHAZIN BAĞLANMASI



Dikkat!
Sürücü denetleyicinin içerisinde iletken tellerin izolasyonunu sıyırmayın



Donanım etkinleştirme
** (resimli gösterime bakınız ⓘ "INVEOR Alpha donanım etkinleştirme")

