Safety & Quickstart Booklet

- **Please read this Safety Information BEFORE installing the equipment.**
- **Bitte lesen Sie die folgenden Informationen, BEVOR Sie mit der Installation des Geräts beginnen.**
- **Veuillez lire cette information sur la sécurité Avant d'installer l'équipement**
- **Si prega di leggere attentamente le informazioni sulla sicurezza PRIMA di installare l'apparecchiatura**
- **请在安装前阅读本安全指南。**

ENGINEERING **YOUR** SUCCESS.

Safety & Quickstart Booklet

HA501717U100 Issue 1

Contents:

Chapter 1: English

SAFETY INFORMATION

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalogue and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

Requirements

IMPORTANT: Please read this information BEFORE installing the equipment.

WARNING – Operation of this equipment requires detailed installation and operation instructions provided in the Installation/Operation manual intended for use with this product. This information is provided on the CD ROM, floppy diskette(s), or other storage devise included in the container this device was packaged in. It should be retained with this device at all times. A hard copy of this information may be ordered from the supplier indicated on the product label.

Intended Users
This leaflet is to be made available to all persons who are required to install, configure or service equipment described herein, or any other associated operation.
The information given is intended to highlight safety issues, EMC considerations, and to enable the user to obtain maximum benefit from the equipment.

Application Area
The equipment described is intended for industrial motor speed control utilising DC motors, AC induction or AC synchronous machines.

Personnel
Installation, operation and maintenance of the equipment should be carried out by competent personnel. A competent person is someone who is technically qualified and familiar with all safety information and established safety practices; with the installation process, operation and maintenance of this equipment; and with all the hazards involved.

Product Warnings

 DANGER Risk of electric shock	 Attention – hot surfaces	 Caution Refer to documentation	 Earth/Ground Protective Conductor Terminal

Hazards

DANGER! - Ignoring the following may result in injury

1. This equipment can endanger life by exposure to rotating machinery and high voltages.
2. The equipment must be permanently earthed due to the high earth leakage current, and the drive motor must be connected to an appropriate safety earth.
3. Ensure all incoming supplies are isolated before working on the equipment. Be aware that there may be more than one supply connection to the drive.
4. There may still be dangerous voltages present at power terminals (motor output, supply input phases, DC bus and the brake, where fitted) when the motor is at standstill or is stopped.
5. For measurements use only a meter to IEC 61010 (CAT III or higher). Always begin using the highest range. CAT I and CAT II meters must not be used on this product.
6. Allow at least 5 minutes for the drive's capacitors to discharge to safe voltage levels (<50V). Use the specified meter capable of measuring up to 1000V dc & ac rms to confirm that less than 50V is present between all power terminals and earth.
7. Unless otherwise stated, this product must NOT be dismantled. In the event of a fault the drive must be returned. Refer to "Routine Maintenance and Repair".
8. WARNING – The opening of the branch-circuit protective device may be an indication that a fault current has been interrupted. To reduce the risk of fire or electric shock, current-carrying parts and other components of the controller should be examined and replaced if damaged.

WARNING! - Ignoring the following may result in injury or damage to equipment

SAFETY

Where there is conflict between EMC and Safety requirements, personnel safety shall always take precedence.

- Never perform high voltage resistance checks on the wiring without first disconnecting the drive from the circuit being tested.
- Whilst ensuring ventilation is sufficient, provide guarding and /or additional safety systems to prevent injury or damage to equipment.
- All control and signal terminals are SELV, i.e. protected by double insulation. Ensure all external wiring is rated for the highest system voltage.
- All exposed metalwork in the Inverter is protected by basic insulation and bonded to a safety earth.
- When replacing a drive in an application and before returning to use, it is essential that all user defined parameters for the product's operation are correctly installed.
- Thermal sensors contained within the motor must have at least basic insulation.
- RCDs are not recommended for use with this product but, where their use is mandatory, only Type B RCDs should be used.

EMC

- In a domestic environment this product may cause radio interference in which case supplementary mitigation measures may be required.
- This equipment contains electrostatic discharge (ESD) sensitive parts. Observe static control precautions when handling, installing and servicing this product.
- This is a product of the restricted sales distribution class according to IEC 61800-3. It is designated as "professional equipment" as defined in EN61000-3-2. Permission of the supply authority shall be obtained before connection to the low voltage supply.

WARNING! – Control Unit Removal / Fitting
Isolate supply before plugging or unplugging control unit to the power stack.

CAUTION!

APPLICATION RISK

- The specifications, processes and circuitry described herein are for guidance only and may need to be adapted to the user's specific application. We can not guarantee the suitability of the equipment described in this Manual for individual applications.

RISK ASSESSMENT

Under fault conditions, power loss or unintended operating conditions, the drive may not operate as intended.

In particular:

- Stored energy might not discharge to safe levels as quickly as suggested, and can still be present even though the drive appears to be switched off
- The motor's direction of rotation might not be controlled
- The motor speed might not be controlled
- The motor might be energised

A drive is a component within a drive system that may influence its operation or effects under a fault condition.

Consideration must be given to:

- Stored energy
- Supply disconnects
- Sequencing logic

QUICKSTART

BEFORE YOU START

This document covers the steps necessary for a basic start up of the AC30 drive. Drive start ups should be performed by competent electrical technicians who are familiar with AC drives and their applications. For detailed installation, safety and applications refer to the AC30 Product Manual HA501718U001.

Ensure that all local electric codes are met while installing the drive. Check that all live parts are covered to protect against electric shock and that unexpected rotation of the motor will not result in bodily harm or injury.

This document expects that the drive is already installed in its intended location and that all relevant installation procedures have been followed. Please ensure that the drive has adequate ventilation so that ambient temperature does not exceed 45°C (112°F) under normal operating conditions.

ABOUT THIS QUICKSTART

This QuickStart will:

- Familiarise you with the terminals and operation of the unit.
- Provide ***basic** installation details and a quick set-up procedure.
- Show you how to Autotune the drive and start the motor.

***** *Because the AC30 is a system product and we have no knowledge of your application, we detail the quickest way to power-up the drive using a simple earthing scheme with minimal control wiring. Refer to the full AC30 Product Manual HA501718U001 for items not covered in this QuickStart.*

Provided with every AC30 unit is:

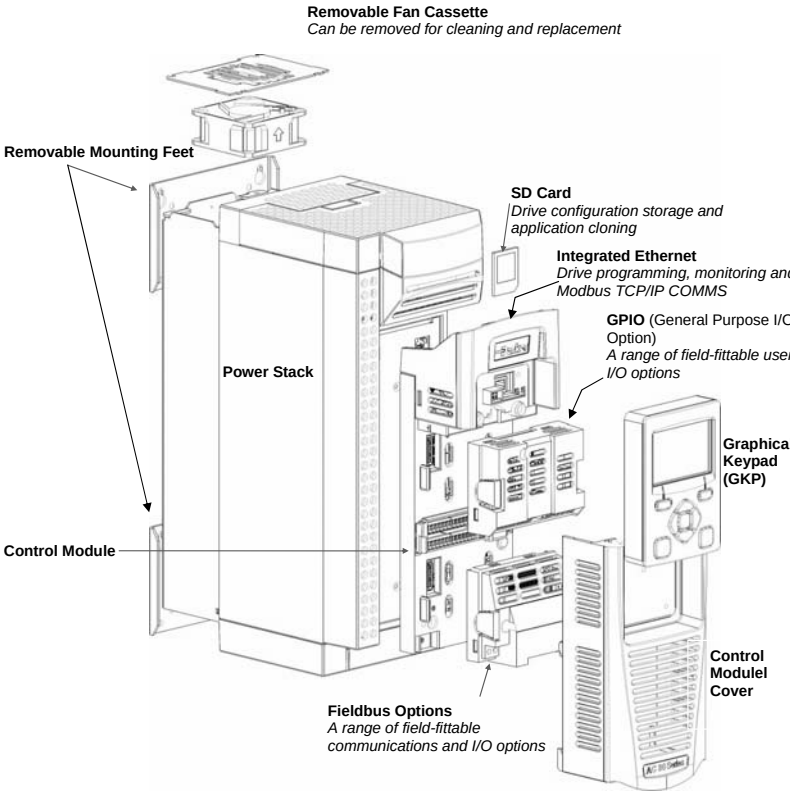
- Quickstart.
- DVD pack containing a cd with the Product Manual and the AC30 Parker Drive Quicktool (PDQ) which is the pc programming tool.
- GKP (Graphical Keypad) for local or remote fitting refer to AC30 Product Manual HA501718U001.
- Customer ordered Options.

This QuickStart assumes that:

- You are a competent technician with experience of installing this type of equipment.
- You are familiar with the relevant standards and Local Electric Codes (which take precedence).
- You have read and understood the Safety Information provided at the front of this QuickStart.
- You realise that this guide contains only basic information and that you may need to refer to the AC30 Product Manual to complete your installation.
- You are not using the Safe Torque Off (STO) feature of this product and that you will disable it as instructed in this QuickStart manual (see page 1-4).

Safety Note – Use of the STO feature requires full compliance with the STO Chapter 6 of the AC30 Product Manual to which the user must first refer.

OVERVIEW



Frame D Illustrated

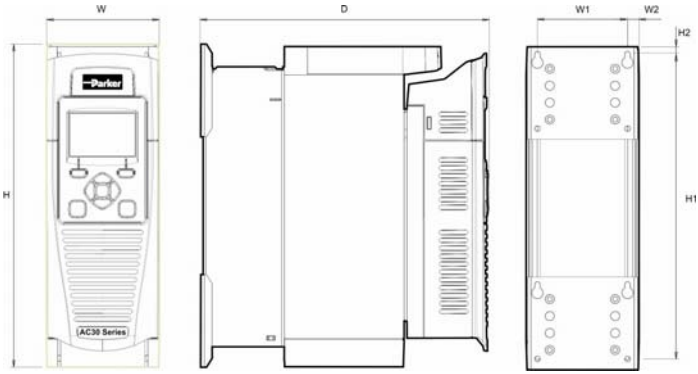
Safe Torque Off

To disable STO:
Connect X12/05 to X10/01 and X10/03
Connect X12/06 to X10/04

To use the STO feature the user must read and fully understand Chapter 6 of the AC30 Product Manual HA501718U001.

Dimensions for Panel Mount Installation

Dimensions for Through Panel Installation see the full AC30 Product Manual – Chapter 4 Installation.

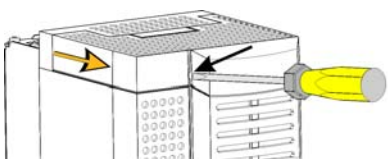


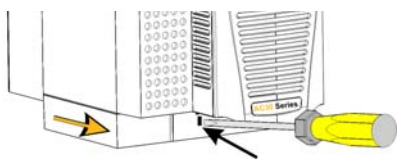
Mechanical Dimensions for AC30 Drive - Frame D Illustrated

Models	Max. Weight kg/lbs	H	H1	H2	W	W1	W2	D	Fixings
Frame D	4.5 (10)	286.0 (11.26)	270.0 (10.6)	6.5 (0.25)	100.0 (3.93)	80.0 (3.15)	10.0 (0.39)	255.0 (10.0)	Slot 4.5mm wide Use M4 fixings
Frame E	6.8 (15)	333.0 (13.11)	320.0 (12.6)	6.5 (0.25)	125.0 (4.92)	100.0 (3.93)	12.5 (0.49)	255.0 (10.0)	
Frame F	10.0 (22)	383.0 (15.07)	370.0 (14.5)	6.5 (0.25)	150.0 (5.90)	125.0 (4.92)	12.5 (0.49)	255.0 (10.0)	
All dimensions are in millimetres (inches)									

Top & Bottom Cover Removal

To remove **top** and **bottom** covers, insert a screwdriver straight into the slot and **push** to release the catch, then **slide off** cover. For fitting instructions see Chapter 4 – Installation in the AC30 Product Manual.



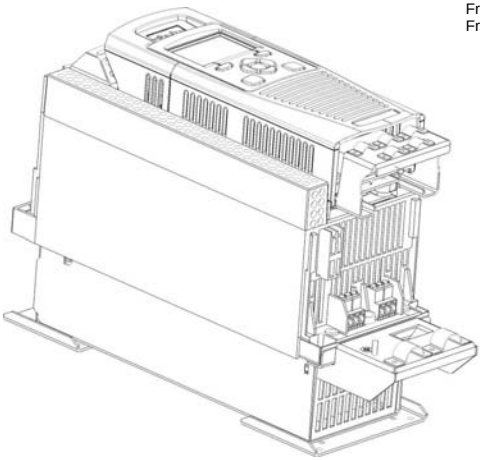


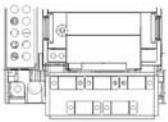
Cabling Bracket for Control & Main Cable

When bottom cover is removed you can install the cabling brackets, if required.
The cabling brackets are standard with C2 filtering products and can be obtained from Parker using the following part numbers:

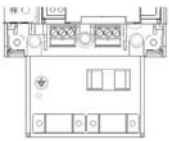
The part numbers for cabling brackets are:

Frame D – LA501935U001
Frame E – LA501935U002
Frame F – LA501935U003





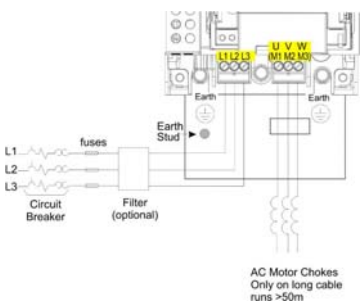
Control cable wiring bracket

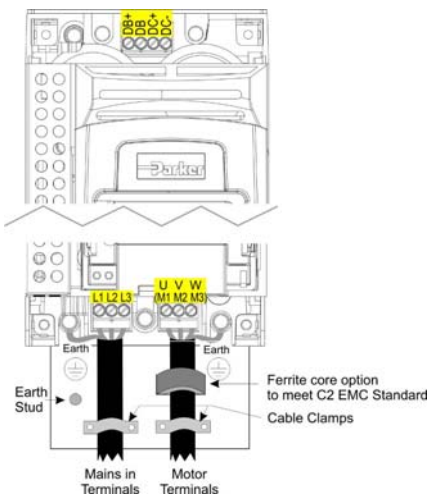


Main cable wiring bracket

Power Wiring Connections

Feed the power supply and motor cables into the drive under the cable clamps using the correct cable entries, and connect to the power terminals. Tighten all terminals to the correct tightening torque, refer to the 'Terminal Tightening Torques' table in the AC30 Product Manual, Chapter 4 'Installation'.



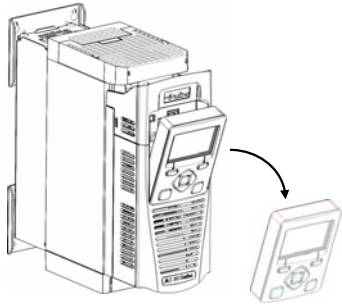


Note: Cable clamps and earthing brackets are only supplied with a C2 EMC Filter kit (see previous page for part numbers), see page 1-14 for motor termination details.

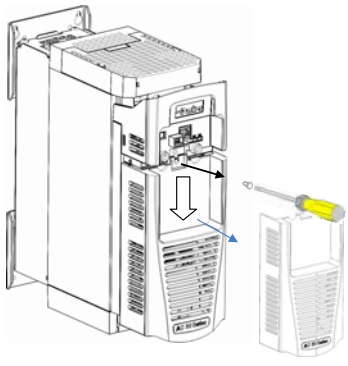
Control Module Cover Removal

To gain access to the control wiring first remove the control module cover as follows:

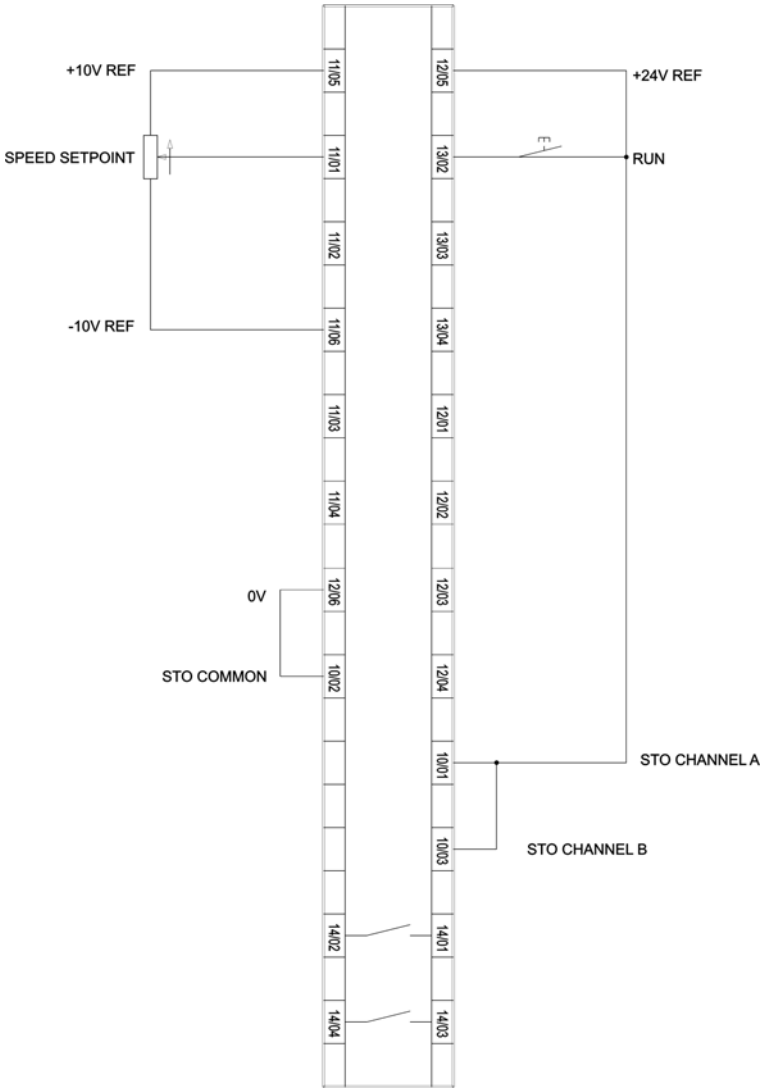
1. First remove the GKP by pulling from the top down, and remove.



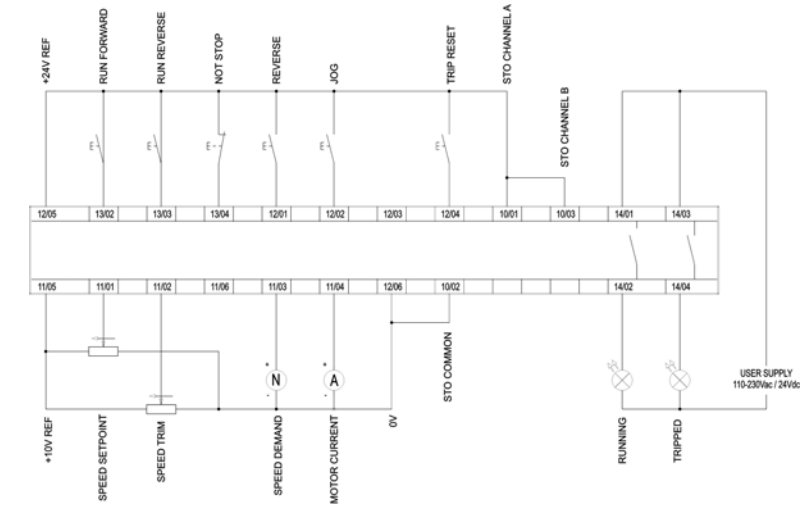
2. Undo the screw and slide the control module cover down slightly, then remove.



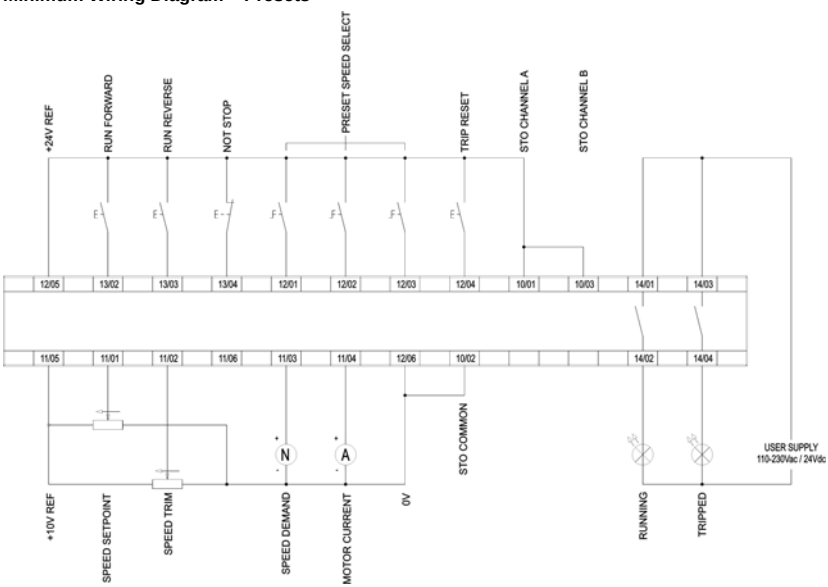
Minimum Wiring Diagram – Minimum Connections



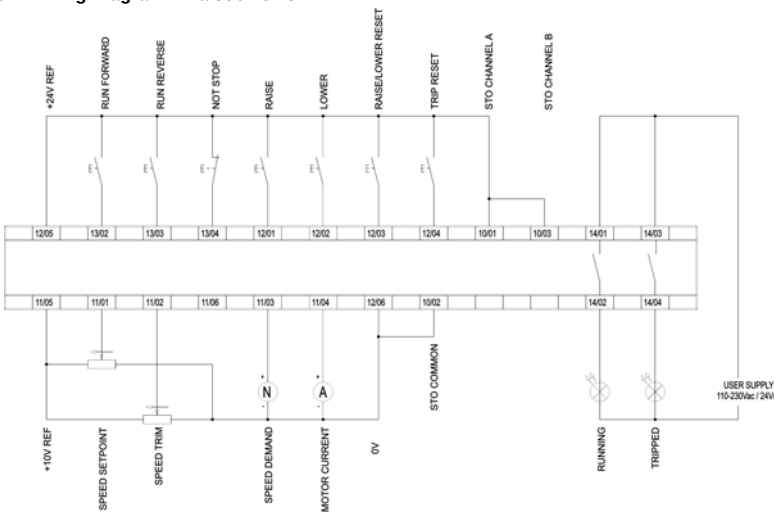
Minimum Wiring Diagram – Basic Speed Control



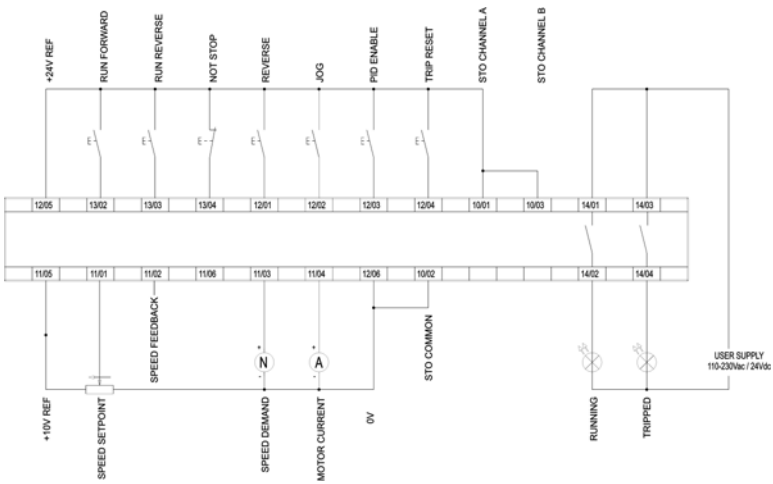
Minimum Wiring Diagram – Presets



Minimum Wiring Diagram – Raise / Lower



Minimum Wiring Diagram – PID

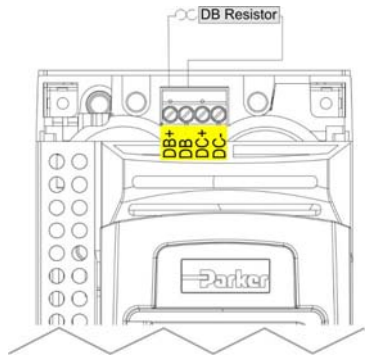


Dynamic Braking Resistors

♦ **The AC30 unit must be fitted with external braking resistors if braking is required**.

Wiring Details

WARNING
Do not apply external voltage sources (mains supply or otherwise) to any of the braking terminals: DB+, DB. This can lead to damage to the drive and installation, and risk to personnel.



Frame Ratings

All Frame sizes 400v 3 phase:

Frame	Normal Duty	Heavy Duty
Frame D	1.1 – 5.5 kW 1.5 – 7.5 hp	0.75 – 4 kW 1 – 5 hp
Frame E	7.5 – 11 kW 10 – 15 hp	5.5 – 7.5 kW 7.5 – 10 hp
Frame F	15 – 18 kW 20 – 25 hp	11 – 15 kW 15 – 20 hp

Drive Start-up

- Read the Safety section at the front of the QuickStart.
- Ensure that all local electric codes are met.
- Check for damage to equipment.
- Check for loose ends, clippings, filings, drilling swarf etc. lodged in the drive and system.
- Check all external wiring circuits of the system - power, control, motor and earth connections.
- Ensure that unexpected rotation of the motor in either direction will not result in damage, bodily harm or injury. Disconnect the load from the motor shaft, if possible.
- Check the state of the Motor Thermistor and Brake Resistor connectors. Check external run contacts are open. Check external speed setpoints are all at zero.
- Ensure that nobody is working on another part of the system which will be affected by powering up.
- Ensure that other equipment will not be adversely affected by powering up.
- Check motor stator connections are correctly wired for Star or Delta as necessary for drive output voltage.
- Check that the STO feature has been disabled. See page 1-4 of this Quickstart Manual.
- DANGER: some motors are not suitable for use with STO. Refer to Chapter 6 – STO in the AC30 Product Manual for full details.

If all connections have been checked, it is time to POWER-UP the drive

Drive Setup

See “Getting Started” on the next page, and refer to the AC30 Product Manual “Chapter 9 Setup Wizard” and Appendix D contains information about GKP menus and parameter names.

Motor Data

Before attempting to set up the drive, you will need some motor information. This is found on the motor nameplate. The information you will need is listed below:

Base Volts
Base frequency
Base RPM
Full load amps
No load amps (mag current)
Connection (star or delta)

Getting Started - GKP Setup Wizard

The GKP can be fitted remotely – see Chapter 4 Installation of the AC30 Product Manual for details.

Purpose of the Setup Wizard

The purpose of the setup wizard is to configure the drive in as clear and concise manner.

Starting the Setup Wizard

The Setup Wizard is automatically invoked when the drive is reset to factory default settings. The setup wizard may be invoked at any other time by changing the parameter “Run Setup?” to YES (you will find this under “Commissioning::Quick Setup::”) then returning to the top of the menu tree, (by pressing the left key repeatedly.

Running the Setup Wizard

On entry to the Setup Wizard, the first action is to set the language that is to be used. The language may be selected by using the UP and DOWN keys. Pressing the OK key confirms the selection and moves on to the next step.

The rest of the Setup Wizard consists of a several sections. Each section corresponds to a functional component of the drive, for example:

- Application selection
- Motor Data
- Analog input and output ranges
- Fieldbus options
- On-board Ethernet
- Autotune

If not required, any section may be skipped.

The default setting for all parameters depends on earlier answers and on the physical configuration of the drive. All data entered is automatically saved without the need for any additional commands.

Finalising Setup

Once the Setup Wizard has been run to completion the feature is automatically disabled. Re-starting the drive will not cause the Setup Wizard to be run again. (If it is desired to re-run the Setup Wizard, this can be achieved as detailed above in “Starting the Setup ”).

Ethernet Communications

Connecting and disconnecting the Ethernet cable.

See Chapter 12 Ethernet of the AC30 Product Manual for this information.

COMPLIANCE

A comprehensive guide to product compliance is available in the AC30 Product Manual.

Warning – Where there is a conflict between EMC and safety requirements personnel safety shall always take precedence.

Operation of this equipment requires detailed installation and operation instructions provided in the product manual intended for use on this product. This information is provided on the cd rom included in the container this product was packaged in. It should be retained with the product at all times.

Caution: This is a product of the restricted sales distribution class according to IEC 61800-3. It is designated as "professional equipment" as defined in EN61000-3. Permission of the supply authority shall be obtained before connection to the low voltage supply.

In a domestic environment this product may cause radio interference in which case supplementary mitigation measures may be required.

This equipment contains electrostatic discharge (ESD) sensitive parts. Observe static control precautions when handling, installing and servicing this product.

EMC Emissions

Radiated Emissions comply with EN61800-3 category C1, C2 and C3 when installed in accordance with instructions in Chapter 4 refer to "mounting the unit".

Conducted Emissions comply with EN61800-3 category C3 and C2 without external filter and category C1 when fitted with specified external filter.

Immunity complies with the requirement of EN61800-3, for equipment intended for use in the second environment.

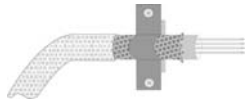
EMC Connections

For compliance with the EMC requirements, the "0V/signal ground" is to be separately earthed. When a number of units are used in a system, these terminals should be connected together at a single, local earthing point.

Control and signal connections should be made with screened cables, with the screen connected only at the VSD end. However, if high frequency noise is still a problem, earth screen at the non VSD end via a 0.1µF capacitor.

Note: Connect the control and signal screens (at the VSD end) to the VSD protective earth point, and not to the control board terminals.

Motor cables should have a 360° bond to ensure a low impedance connection, as per the figure opposite;



Planning Cable Runs

Use the shortest possible motor cable lengths.

Use a single length of cable to a star junction point to feed multiple motors.

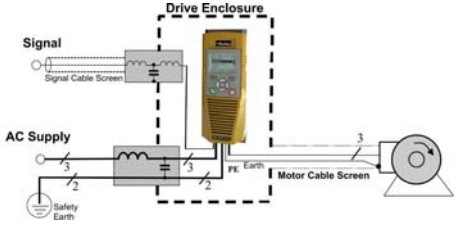
Keep electrically noisy and sensitive cables apart. If this is not possible parallel cable runs should be separated by at least 0.25metres, for runs longer than 10 meters, separation should be increased proportionally.

Sensitive cables should cross noisy cables at 90°C.

Never run sensitive cables close or parallel to the motor, dc link and braking chopper circuit for any distance.

Never run supply, dc link or motor cables in the same bundle as the signal/control and feedback cables, even if they are screened.

Ensure EMC filter input and output cables are separately routed and do not couple across the filter.



Chapter 2: Deutsch

SICHERHEITS INFORMATIONEN

FEHLERHAFTE ODER UNSACHGEMÄSSE AUSWAHL bzw. VERWENDUNG DER HIER BESCHRIEBENEN PRODUKTE KANN ZU TOD, VERLETZUNGEN ODER SACHSCHADEN FÜHREN.

- Dieses Dokument und andere Informationen von der Parker-Hannifin Corporation, seinen Tochtergesellschaften und Vertragshändlern enthalten Produkt- oder Systemoptionen zur weiteren Verwendung durch Anwender mit technischen Kenntnissen.
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- Soweit Parker oder seine Tochtergesellschaften oder Vertragshändler Komponenten oder Systemoptionen basierend auf technischen Daten oder Spezifikationen liefern, die vom Anwender beigestellt wurden, ist der Anwender dafür verantwortlich festzustellen, dass diese technischen Daten und Spezifikationen für alle Anwendungen und vernünftigerweise vorhersehbaren Verwendungszwecke der Komponenten oder Systeme geeignet sind und ausreichen.

Allgemeines

IMPORTANT: Bitte lesen Sie die folgenden Informationen, BEVOR Sie mit der Installation des Geräts beginnen.

Diese Anleitung sollte allen Personen zugänglich sein, die den beschriebenen Antrieb installieren, konfigurieren, oder andere mit dem Antrieb zusammenhängende Tätigkeiten durchführen.
Die folgenden Informationen enthalten Sicherheitsaspekte und EMV Betrachtungen, die es dem Anwender ermöglichen, den größtmöglichen Nutzen aus dem Antrieb zu erzielen.

– Der Umgang mit dem in diesem Lieferumfang enthaltenen Gerät, erfordert spezifische Kenntnisse. Diese können der Installations- / Bedienungsanleitung des Gerätes entnommen werden. Diese Informationen befinden sich auf CD ROM, Diskette oder auf anderen Speichermedien, und sind ebenfalls in diesem Lieferumfang enthalten. Die Installations- / Bedienungsanleitung sollte jedem Nutzer des Gerätes zugänglich gemacht werden. Ein gedrucktes Exemplar können Sie bestellen bei:
Parker Hannifin GmbH - Von-Humboldt-Str. 10 - 64646 Heppenheim (Germany) Tel.: + 49 (0)6252 6732-0, Fax: + 49 (0)6252 6732-105

Einsatzgebiet

Das beschriebene Gerät dient zur Drehzahlreglung von industriellen DC- Motoren, AC- Asynchron oder AC-Synchronmotoren.

Personal

Die Installation, Bedienung und Instandhaltung des Geräts sollte nur von einem Fachmann durchgeführt werden, der technisch kompetent und mit allen Sicherheitsvorschriften und lokalen Bestimmungen vertraut ist.

Produkt Warnhinweise

 Attention – hot surfaces	 **VORSICHT** Schockgefahr	 **Achtung** Dokumentation beachten	 **Erdung/Ground** Schutzleiterklemme

Gefahr! – Missachtung der folgenden Anweisungen kann zu Schäden führen

1. Bestimmte Teile des Antriebs stehen unter gefährlichen Spannungen. Bei Berührung dieser Teile oder auch rotierender Maschinenteile besteht die Gefahr von Tod, schweren gesundheitlichen oder materiellen Schäden.
2. Das Gerät muss permanent geerdet sein. Der Motor muss an einem angemessenen Schutzleiter angeschlossen sein.
3. Sämtliche Signal- und Steuerklemmen sind durch doppelte Isolierung geschützt (Schutzkleinspannung). Stellen Sie sicher, dass sämtliche Leitungen für die maximal mögliche Spannung ausgelegt sind.
4. Es können gefährliche Spannungen an den Leistungsklemmen (Einspeisung, Motorabgang, DC Zwischenkreis und der Bremse, sofern eingebaut) anliegen, auch wenn der Motor stillsteht oder gestoppt hat.

   Benutzen Sie zu Messzwecken nur Messgeräte nach IEC 61010 (Kat. III oder höher) und beginnen Sie die Messungen immer im höchsten Messbereich.
5. Warten Sie 5 Minuten bis sich die Zwischenkreiskondensatoren auf ein sicheres Level entladen haben (<50V). Benutzen Sie Messleitungen, die bis 1000V DC & AC effektiv spezifiziert sind, um sicherzustellen, dass eine ungefährliche Spannung <50V zwischen allen Leistungsklemmen und Erde anliegt.
6. Ein Öffnen oder Zerlegen des Antriebs ist aus Sicherheits- und Gewährleistungsgründen nicht zulässig. Im Fehlerfall muss das Gerät zur Überprüfung und gegebenenfalls zur Reparatur eingeschickt werden.
7. WARNUNG – Das Auslösen der Gerätesicherung kann auf einen Fehlerstrom, bedingt durch einen Gerätefehler, hinweisen. Um das Risiko von Verletzungen oder Sachschäden durch z. B. Brand oder Stromschlag zu minimieren, prüfen Sie, ob spannungsführende Teile oder andere Komponenten des Gerätes beschädigt sind. Im Falle einer Beschädigung, müssen diese Teile fachgerecht ausgetauscht werden.

WARNUNG! – Missachtung der folgenden Anweisungen kann Verletzungen verursachen oder zu Beschädigungen am Gerät führen.

SICHERHEIT

Bei einem Konflikt zwischen EMV- und Sicherheitsbestimmungen, haben die personenbezogenen Sicherheitsbestimmungen immer Vorrang.

- Führen Sie niemals Hochspannungs-Festigkeitsüberprüfungen an der Verdrahtung durch, ohne vorher überprüft zu haben, dass der Antrieb spannungslos und vom Stromkreis sicher getrennt ist.
- Vergewissern Sie sich, dass die Belüftung ausreichend ist und installieren Sie zusätzliche Sicherheitssysteme, um Beschädigungen des Geräts vorzubeugen.
- Beim Austauschen eines Antriebs in einer Applikation ist darauf zu achten, dass vor dem Einschalten alle anwendungs-spezifischen Parameter korrekt installiert wurden.
- Alle Steuer- und Signalanschlussklemmen sind sicherheitskleinspannungsfest, durch doppelte Isolation geschützt. Stellen Sie sicher, dass alle externen Leitungen für die höchste Systemspannung ausgelegt sind.
- Im Motor vorhandene Temperatursensoren müssen mindestens basisisoliert sein.
- Alle berührbaren metallischen Teile des Geräts sind durch eine Basisisolierung und Anschluss an einen Schutzleiter abgesichert.
- Der Einsatz von FI-Schutzschaltern wird nicht empfohlen. Ist ihre Verwendung dennoch vorgeschrieben, verwenden Sie FI-Schalter Typ B (EN61009).

EMV

- Im Betrieb kann dieses Gerät EMV- STÖRUNGEN hervorrufen, gegen die der Betreiber gegebenenfalls die erforderlichen Gegenmaßnahmen treffen muss.
- Das Gerät enthält Bauteile, die für elektrostatische Entladung anfällig sind. Treffen Sie entsprechende Schutzmaßnahmen, wenn Sie das Gerät installieren, bedienen und warten.
- Das Produkt ist für den professionellen Einsatz gemäß EN61000-3-2 bestimmt. Sofern vorgeschrieben, muss eine Betriebserlaubnis vom Netzbetreiber vorliegen, bevor das Gerät an das örtliche Niederspannungsnetz angeschlossen werden kann.

ACHTUNG!

ANWENDUNGSRISIKO

- Die Spezifikationen, Beispiele und Schaltungen, wie sie in diesem Handbuch beschrieben sind, dienen nur als Richtlinie und bedürfen gegebenenfalls einer kundenspezifischen Anpassung. Das Anpassen an anwenderspezifische Anlagen oder Systeme liegt außerhalb des Verantwortungsbereichs von Parker Hannifin.

RISIKOBEURTEILUNG

Bei Störungen, Netzspannungsausfall, Gerätefehlern oder sonstigen unbeabsichtigten Betriebsbedingungen besteht die Möglichkeit, dass das Gerät nicht spezifikationsgemäß funktioniert. Im Einzelnen bedeutet dies:

- die im Gerät gespeicherte Energie ist nicht abgebaut worden und es können noch gefährliche Spannungen anliegen, auch wenn das Gerät ausgeschaltet ist.
- die Motordrehrichtung lässt sich nicht steuern
- die Motordrehzahl kann nicht geregelt werden
- der Motor steht unter Spannung

Ein Umrichter/Stromrichter ist eine Komponente in einem System, die im Fehlerfall die Funktion der Anlage beeinflussen kann.
Auf folgendes ist besonders zu achten:

- ungewolltes Schalten
- gespeicherte Energie im Antrieb
- unkontrolliertes Drehen
- Ablauflogik im System

Chapter 3: Français

Informations de Sécurité

LA DEFAILLANCE OU L'UTILISATION DE MANIERE INCORRECTE OU NON CONFORME A SA DESTINATION DU PRODUIT DECRIT DANS CE DOCUMENT PEUT CAUSER UN RISQUE DE BLESSURE OU DE MORT POUR L'UTILISATEUR OU DE DOMMAGE MATERIEL

Ce document et autres informations, de Parker-Hannifin Corporation ses filiales et distributeurs autorisés, contient les informations produits ou systèmes pour de plus amples investigations de l'utilisateur ayant une expertise technique.
L'utilisateur, à l'aide de sa propre analyse et de ses tests, est seul responsable de la sélection des composants et du système et assume que toutes les performances, l'endurance, la maintenance, la sécurité et les précautions requises par l'application sont atteintes. L'utilisateur doit analyser tous les aspects de l'application, suivre les standards industriels applicables, et suivre les informations contenues dans le catalogue courant du produit et dans toutes les autres informations fournies par Parker ou ses filiales ou ses distributeurs autorisés.
Dans la mesure ou Parker ou ses filiales ou ses distributeurs autorisés fournissent des composants ou des options basées sur des données ou des spécifications fournies par l'utilisateur, l'utilisateur est responsable afin de déterminer que les données et spécifications sont appropriées et suffisantes pour toutes les applications et les utilisations raisonnablement prévisibles des composants ou du système.

Exigence

IMPORTANT: Veuillez lire ces consignes de sécurité avant de mettre en service le variateur.

Attention – L'utilisation de cet équipement nécessite le suivi et l'utilisation des instructions fournies dans le manuel d'installation/d'utilisation de ce produit. Ces informations sont fournies sur le CD ROM, disquettes ou autre moyen de stockage inclus dans le colis où ce composant est reçu. Elles doivent être conservées avec le produit pour toute utilisation. Une copie de ces informations peut être commandée aux fournisseurs indiqués sur l'étiquette du produit.

Utilisateurs
Ce manuel doit être mis à la disposition des personnes chargées d'installer, configurer ou réparer le variateur ou qui doivent y intervenir pour toute autre raison.
Les informations données rappellent les consignes de sécurité, des considérations CEM, et permettent de tirer le meilleur parti du produit.

Domaine d'application
Le variateur décrit est destiné au pilotage de moteurs DC, moteurs AC à induction ou moteurs AC synchrones triphasés.

Personnel
L'installation, la mise en service et la maintenance de cet équipement doivent être effectuées par du personnel qualifié. Est considérée comme qualifiée toute personne techniquement compétente et familière des consignes de sécurité, des procédures d'installation, de mise en service et de maintenance du variateur, ainsi que tous les risques inhérents à son utilisation.et installation.

Avertissments du produit

	Attention – hot surfaces		DANGER Risque de choc électrique		Attention se référer à la documentation		Terre/Masse Borne du conducteur de protection

Risques

DANGER! – Ne pas prendre en compte ces recommandations peut entraîner blessures ou dommages matériels

1. Cet équipement peut entraîner des dangers de dommages corporels par exposition à des parties en mouvement ou tournantes et à la présence de parties sous tension.
2. L'équipement doit être mis à la Terre de façon permanente à cause des forts courants de fuite. Le variateur et le moteur doivent être connectés à une Terre.
3. Avant d'intervenir sur le variateur, il est nécessaire d'isoler l'alimentation des bornes L1, L2 et L3. Prendre en compte le fait qu'il peut y avoir plus d'une alimentation connectée sur le variateur.
4. Il peut encore y avoir la présence des tensions dangereuses (Bornes d'alimentation, bornes moteur, bus continu (bornes DC+ et DC-), résistance de freinage) lorsque le moteur est à l'arrêt ou n'est pas en mouvement.
5. Pour effectuer des mesures, utiliser un multimètre IEC 61010 (CAT III ou supérieure). Toujours commencer avec le calibre de mesure le plus important.Les multimètres CAT I et CAT 2 ne doivent pas être utilisés sur ce produit
6. Attendre au moins 5 minutes que les condensateurs du variateur se déchargent à des niveaux non dangereux (< 50V). Utiliser le multimètre spécifié capable de mesurer des tensions de 1000V dc et ac pour vérifier que la tension est bien inférieure à 50V entre les bornes de puissance et la Terre.
7. Sans aucune autre consigne, ce produit ne peut être démonté. Dans le cas ou il serait en défaut, le variateur doit être retourné. Se referrer à '"Routine Maintenance and Repair".
8. ATTENTION - l'ouverture du circuit de protection peut être une indication qu'un défaut est apparu. Pour réduire les risques d'incendie ou de choc électrique, les parties actives en courant et autres composants doivent être examinées et remplacées si détériorées.

ATTENTION! - Ne pas prendre en compte ces recommandations peut entraîner blessures ou dommages matériels

SECURITE

Quand il y a un conflit entre Sécurité et CEM, la sécurité du personnel est toujours prioritaire

- Ne jamais effectuer de contrôle au mégohmmètre sans déconnecter le variateur du circuit testé.
- Tout en assurant une ventilation suffisante, prévoir des dispositifs de sécurité additionnels afin de prévenir toute blessures ou dommages matériels.
- Lors du remplacement du variateur, veiller à bien re-régler tous les paramètres du variateur avant son utilisation.
- Toutes les connections sont SELV, i.e. protégées par une double isolation.

S'assurer que toutes les connections externes sont dimensionnés pour la tension système la plus haute.

- Les sondes thermiques moteurs doivent être au minimum en isolation simple.
- Toutes les parties métalliques exposées du variateur sont protégées par une isolation simple et une mise à la terre.
- Les détecteurs de défaut à la terre ne sont pas recommandés avec ce variateur. Si leur utilisation est obligatoire, il est conseillé d'utiliser des détecteurs de défaut d'isolement de type B.

CEM

- Dans un environnement domestique, ce produit peut causer des interférences radio. Dans ce cas, des mesures complémentaires peuvent être nécessaires.
- Ce produit contient des composants sensibles aux décharges électrostatiques (DES). Observer des précautions de manipulations lors de la manutention, l'installation et la mise en route du produit.
- L'appareil correspond à la norme IEC 61800-3, i.e. il est soumis à une distribution limitée. Il est désigné comme 'équipement professionnel' comme défini dans EN 61300-3-2. L'autorisation de l'autorité est requise pour le connecter à une alimentation basse tension.

ATTENTION!

RISQUES DE L'APPLICATION

- Les spécifications, processus et câblages décrits ci-après sont donnés à titre indicatif. Il peut être nécessaire de les adapter pour répondre aux besoins spécifiques d'un utilisateur. Nous ne pouvons garantir que le variateur présenté convient à toutes les applications envisageables.

ESTIMATION DES RISQUES

En cas de défaut, perte accidentelle d'alimentation ou de certaines conditions de fonctionnement, le variateur peut ne pas fonctionner comme prévu.
En particulier :

- L'énergie stockée peut ne pas être à des niveaux non dangereux comme prévu, et peut toujours être présente même si le variateur n'est plus alimenté.
- Le sens de rotation du moteur peut ne pas être contrôlé.
- La vitesse du moteur peut ne plus être contrôlée.
- Le moteur peut être sous tension.

Un variateur est un composant d'un système qui peut influencer son fonctionnement et ses effets lorsqu'il est en défaut.
Il faut prendre en considération :

- L'énergie stockée
- La déconnexion des alimentations
- la séquence logique

Chapter 4: Italiano

INFORMAZIONI SULLA SICUREZZA

LA SCELTA O L'UTILIZZO IMPROPRIO DEI PRODOTTI ED ACCESSORI DI SEGUITO DESCRITTI POSSONO PROVOCARE MORTE, GRAVI LESIONI PERSONALI O DANNI ALLE COSE.

Il presente documento ed altre informazioni provenienti da Parker Hannifin Corporation, società affiliate e distributori autorizzati forniscono opzioni, prodotti e/o sistemi il cui utilizzo deve essere valutato da utenti in possesso di adeguate competenze tecniche.
L'utente con le proprie valutazioni ed i propri test è l'unico responsabile nella scelta finale di componenti o sistemi nonché della garanzia che tutti i requisiti di prestazioni, di sicurezza e normativi dell'applicazione siano soddisfatti. L'utente deve analizzare tutti gli aspetti dell'applicazione, seguendo le normative industriali applicabili e tenere in considerazione le informazioni riguardanti il prodotto contenute in questo opuscolo e in ogni altro materiale fornito da Parker, società affiliate e distributori autorizzati.
In estensione a quanto sopra, se Parker, le società affiliate oppure i distributori autorizzati forniscono componenti, sistemi od opzioni sulla base di dati o specifiche fornite dall'utente, l'utente è egli stesso responsabile nel valutare che tali dati e specifiche sono adatti e sufficienti per tutte le applicazioni ed usi, ragionevolmente prevedibili, dei componenti o sistemi.

Requisiti

Leggere queste informazioni PRIMA di installare l'apparecchio.

ATTENZIONE – L'impiego di questo apparecchio richiede che vengano scrupolosamente seguite le istruzioni di installazione/funzionamento contenute nel manuale prodotto. Queste informazioni sono contenute nel CD ROM, dischetto o altro sistema di archiviazione presente nell'imballo del prodotto. Le informazioni devono essere sempre conservate con il prodotto. E' possibile ordinare una copia aggiuntiva del manuale presso il fornitore indicato sulla targhetta prodotto.

Utilizzatori dell'apparecchio
Questo opuscolo deve essere disponibile per tutte le persone che devono installare, configurare o mettere in servizio l'apparecchio qui descritto oppure eseguire qualsiasi altra operazione ad esso associata.
Le informazioni fornite evidenziano i requisiti di sicurezza, leconsiderazioni EMC ed i suggerimenti che permettono all'utilizzatore di ottenere il funzionamento ottimale.

Campi applicativi
L'apparecchiatura di seguito descritta è stata progettata per il controllo industriale della velocità di macchine che utilizzano motori CC, CA ad induzione o macchine sincrone CA.

Personale addetto
L'installazione, l'operatività e la manutenzione dell'apparecchio devono essere eseguite da personale qualificato. La persona qualificata è colui che risulta competente dal punto di vista tecnico, conosce tutte le informazioni sulla sicurezza e mette in atto pratiche finalizzate a garantirla durante l'installazione, la gestione e la manutenzione di questo apparecchio e delle pericolosità che lo coinvolgono.

Indicazioni prodotto

 Attention – hot surfaces	 **PERICOLO** Rischio di shock elettrico	 **Attenzione** Vedere documentazione	 **Terra** Morsetto terra di protezione

Rischi

PERICOLO! – Ignorare le seguenti regole potrebbe causare incidenti

1. Questo apparecchio può mettere in pericolo la vita per l'esposizione a corpi rotanti ed alte tensioni.
2. L'apparecchio deve avere una messa a terra permanente a causa delle alte correnti di dispersione, il motore comandato deve essere connesso ad un'appropriata connessione alla terra di protezione.
3. Assicurarsi che tutte le alimentazioni di ingresso siano state rimosse prima di operare sull'apparecchio. Considerare la possibilità che ci possa essere più di una sorgente di alimentazione collegata all'apparecchio.
4. Quando il motore è in arresto o fermo potrebbero esserci comunque dei valori di tensione pericolosi presenti nei morsetti di potenza (uscita motore, fase ingresso alimentazione, DC bus e freno dove presenti).
5. Per le misurazioni utilizzare solo apparecchi conformi alla norma IEC 61010 (CAT III o superiore). Iniziare utilizzando sempre la scala più alta. Non possono essere utilizzate per questo apparecchio strumenti in CAT I e CAT II.
6. Attendere almeno 5 minuti per permettere ai condensatori di ridurre la tensione ai loro capi a valori non pericolosi (<50V). Utilizzare strumenti in grado di misurare tensioni fino a 1000V cc ed ac rms per garantire che sia presente una tensione inferiore a 50V tra tutti i morsetti di potenza e la terra.
7. Salvo diverse indicazioni, questo prodotto NON deve essere smantellato. In caso di guasto il convertitore deve essere restituito. Fare riferimento alla voce "Manutenzione e Riparazioni".
8. ATTENZIONE – L'apertura di un qualunque dispositivo di protezione del prodotto potrebbe indicare che è stato rilevato un guasto. Al fine di ridurre il rischio di incendio e shock elettrico, le parti in tensione ed i componenti del prodotto dovrebbero essere esaminati e sostituiti se danneggiati.

ATTENZIONE! - Ignorare le seguenti regole potrebbe causare incidenti o danneggiare il convertitore

SICUREZZA
In caso di discordanza le norme di sicurezza del personale hanno la precedenza nei confronti delle norme EMC

- Non effettuare test di resistenza ad alto tensione senza aver prima scollegato il convertitore.
- Per quanto la ventilazione sia sufficientemente assicurata, provvedere a salvaguardare e/o utilizzare sistemi di sicurezza addizionali per prevenire incidenti o danni all'apparecchio.
- In caso di sostituzione di un convertitore all'interno di un sistema, prima della marcia, è essenziale ripristinare correttamente tutti i valori dei parametri.
- Tutti i morsetti di controllo e segnale sono SELV, quindi a doppio isolamento. Assicurarsi che i cablaggi siano dimensionati per la maggiore delle tensioni utilizzate nel sistema.
- I sensori termici all'interno del motore devono disporre di un minimo isolamento.
- Tutte le parti metalliche accessibili sono protette mediante isolamento e collegate a terra.
- Non è raccomandato l'utilizzo di interruttori differenziali con questo apparecchio, ma dove sia inevitabile la loro installazione si raccomanda di utilizzare solamente differenziali di tipo B.

EMC

- In ambiente domestico l'apparecchio può causare interferenze radio. In tal caso l'utente deve ricorrere ad ulteriori misure di schermatura.
- Questo apparecchio contiene componenti sensibili alle scariche elettrostatiche. E' necessario quindi prendere precauzioni durante la sua messa in servizio e manutenzione.
- Questo è un prodotto concepito per distribuzione di vendita limitata secondo la normative IEC 61800-3. E' progettato come "equipaggiamento professionale" secondo quanto precisato nella normativa EN61000-3-2. Laddove richiesto si devono ottenere i permessi necessari dalle autorità competenti prima di collegarlo ad alimentazioni a bassa tensione.

ATTENZIONE!

RISCHI LEGATI ALL'USO

- Le specifiche tecniche, i processi e gli schemi circuitali descritti all'interno del presente manuale sono di carattere generale e potrebbero necessitare di adattamenti a specifiche richieste applicative. Non è possibile garantire l'adattabilità dell'apparecchiatura per applicazioni individuali.

SITUAZIONI A RISCHIO

In condizioni di guasto, mancanza rete ovvero condizioni operative impreviste, il convertitore potrebbe non funzionare come descritto nel manuale.
In particolare:

- L'energia immagazzinata potrebbe non portarsi a livelli di sicurezza così velocemente come suggerito e potrebbe essere ancora presente nonostante il convertitore appaia spento.
- La direzione di rotazione del motore potrebbe non essere controllata
- La velocità del motore potrebbe non essere controllata
- Il motore potrebbe essere alimentato

Il convertitore è un componente all'interno di un sistema e pertanto potrebbe influenzare il suo funzionamento o causarne danni.
Tenere quindi in considerazione:

- Energia immagazzinata
- Interruzioni dell'alimentazione
- Sequenza logica

Chapter 5: 中文

安全指南

本指南中的产品及相关部件，若发生故障、选择有误或使用不当，则会造成死亡、人身伤害及财产损失。

- 这份由派克汉尼汾公司、子公司及授权经销商提供的文件及其他相关信息还提供了其他可选产品或系统，以供具有专业技术背景的用户做进一步研究。
- 自行对产品或系统进行分析和测试的客户需要对最终选定的系统和部件负责，此外，还需确保系统或部件能够满足应用对性能、耐用性、维护、安全性和报警方面的要求。用户必须分析应用的所有方面，遵守适用的行业标准以及派克公司、子公司或授权经销商提供的最新产品目录以及其他相关资料中所涉及的产品信息。
- 如果派克公司、子公司或授权经销商所提供的部件或系统是以用户提供的数据或规格为依据的，则用户必须确保此数据和规格适用于部件或系统目前以及未来的应用。

使用要求

重要：请在安装设备之前阅读此信息。

警告— 作该设备需要阅读随机附带的详细的安装和操作指南说明。详细说明书可能是CD，软盘或其它储存设备内，他们同设备包装在一起。说明书应该随时与设备放在一起。 建议订购一套纸质样本。

目标用户

手册适用于所有需要对该设备进行安装、调试以及维修的人员和从事其他相关操作的人员。手册以安全标准和电磁兼容性为重点，确保用户获得最佳的使用效果。请填写下表，以供日后参考（设备的安装和使用方法）。

适用范围

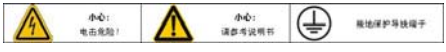
本设备适用于直流工业电机速度控制器，交流感应式或交流同步电机。

使用人员

此设备应由具备相关资质，并熟悉所有安全标准、安全措施，安装流程，设备操作与维护及风险的专业技术人员安装、装配和维修。

产品警告

	Attention – hot surfaces		DANGER Risk of electric shock		Caution Refer to documentation		Earth/Ground Protective Conductor Terminal



危险

危险！— 不遵守以下情况可能造成人身伤害

1. 此设备靠近旋转机械或置于高压下会带来生命危险
2. 由于对地漏电电流较高，设备必须永久接地，且传动电机必须接入安全的地面。
3. 确保所有进电在接入设备前是相互隔离的。注意，传动电机上的电源可能不止一个。
4. 即使电机处于停顿状态或停止，电源（电机输出与供电输入阶段，安装直流汇流条和制动器处）仍然可能存在高压危险。
5. 必须用符合 IEC 61010（CAT III 或更高）标准的电表进行测量。最初都使用最高位。

CAT I 和 CAT II 电表不得用于本产品。

6. 至少留出 5 分钟，以确保传动电机的电容电压降至较低水平（<50v）。使用最高可测量 1000V 直流和交流电的专用电表，以确保所有电源和地面之间的电压小于 50V。
7. 除非另有说明，不得拆卸此产品。如发生故障，必须将传动电机返还。参见“常规保养与维修”。
8. 警告—支路保护设备的打开可能意味着故障电流受到干扰。为减少失火或电击风险，应检查输电零件及其他控制器部件，如有损坏，请及时更换。

警告！— 不遵守以下情况可能会造成人身伤害或财产损失

安全

如电磁兼容性与安全规定相背离，请将人身安全放在首位。

- 测试电路前，一定要先将传动电机卸下，否则不能进行高压电阻检查。
- 保证通风并采取防护和 / 或附加的安全措施以防止造成人身伤害或设备损坏。
- 重新使用被更换的传动电机前，应确保所有用户定义的运行参数都正确。
- 所有的控制终端和信号终端都有双层绝缘保护。确保所有的外部线路都能承受系统的最高电压。
- 电机内的温度传感器至少有基本的绝缘保护。
- 逆变器所有曝露在外的金属部分都要有基本的绝缘保护并安全接地。
- 此产品不宜使用 RCD（漏电保护器），如必须使用，仅限 B 型漏电保护器。

EMC（电磁兼容性）

- 在房间内使用此产品可能会造成无线电干扰，所以需要采取额外的抗干扰措施。
- 此设备含有 ESD（静电放电）敏感部件，因此在操作、安装和维修时需遵守相关操作规范，谨防出现静电。
- 根据 IEC 61800-3 的规定，此设备属于限销产品。该设备在 EN61000-3-2 中被认定为是“专业设备”。连接低压电源前，请先获得供电部门的批准。

小心！

应用风险

- 在本手册内的产品规格，操作流程及电路仅供参考，可能会根据用户的具体使用情况而有所变更。我们无法保证本手册内的设备一定适合具体的应用。

风险估测

当出现故障、漏电或意外操作时，传动电机将无法正常运转，尤其是：

- 所储电能无法在正常时间内转换为低电压，且即使传动电机切断电源时，电能也仍然存在
- 电机旋转方向可能失去控制
- 电机速度可能失去控制
- 电机可能会通电

传动电机是传动系统的一部分。系统出现故障可能会导致系统的运转或效果受影响。这时应考虑：

- 所储电能
- 切断电源
- 逻辑顺序
- 意外操作

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