EN	**FPT500.241-002-101 Installation Manual**	**Power Supply, 3-Phase, 24V, 500W,**
DE	**FPT500.241-002-101 Installationsanleitung**	**Stromversorgung, 3-Phase, 24V, 500W**
FR	**FPT500.241-002-101 Manuel d'installation**	**Alimentation d'Énergie, 3-Phase, 24V, 500W**
ES	**FPT500.241-002-101 Manual de instalación**	**Fuente De Alimentación, 3-Phase, 24V, 500W**
IT	**FPT500.241-002-101 Manuale di Installazione**	**Gruppo di alimentazione, 3-Phase, 24V, 500W**
PT	**FPT500.241-002-101 Manual de instalação**	**Fonte De Alimentação, 3-Phase, 24V, 500W**

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Read this first! — English

Before operating this device, please read this manual thoroughly and retain this manual for future reference! This device may only be installed and put into operation by qualified personnel. If damage or malfunction should occur during operation, immediately turn power off and send device to the factory for inspection. The device does not contain serviceable parts. The information presented in this document is believed to be accurate and reliable and may change without notice. For any clarifications the English translation will be used.

⚠ WARNING **Risk of electrical shock, fire, personal injury, or death:**

- Turn power off before working on the device. Protect against inadvertent re-powering.
- Do not open, modify or repair the device.
- Do not use in wet locations or in areas where moisture or condensation can be expected.
- Do not touch during power-on and immediately after power-off. Hot surfaces may cause burns.

Vor Inbetriebnahme lesen! — Deutsch

Bitte lesen Sie diese Warnungen und Hinweise sorgfältig durch, bevor Sie das Gerät in Betrieb nehmen. Bewahren Sie die Anleitung zum Nachlesen auf. Das Gerät darf nur durch fachkundiges und qualifiziertes Personal installiert werden. Bei Funktionsstörungen oder Beschädigungen schalten Sie sofort die Versorgungsspannung ab und senden das Gerät zur Überprüfung ins Werk. Das Gerät beinhaltet keine Servicebauteile. Die angegebenen Daten dienen allein der Produktbeschreibung und sind nicht als zugesicherte Eigenschaften im Rechtssinne aufzufassen. Im Zweifelsfall gilt der englische Text.

⚠ WARNUNG **Missachtung nachfolgender Punkte kann einen elektrischen Schlag, Brände, schwere Unfälle oder Tod zur Folge haben:**

- Schalten Sie die Eingangsspannung vor Installations-, Wartungs- oder Änderungsarbeiten ab und sichern Sie diese gegen unbeabsichtigtes Wiedereinschalten.
- Führen Sie keine Änderungen oder Reparaturversuche am Gerät durch. Gerät nicht öffnen!
- Betreiben Sie das Gerät nicht in feuchter Umgebung oder in einer Umgebung, bei der mit Betauung oder Kondensation zu rechnen ist.
- Gehäuse nicht während des Betriebes oder kurz nach dem Abschalten berühren. Heiße Oberflächen können Verletzungen verursachen.

A lire avant mise sous tension! — Français

Veuillez lire ces instructions de montage et d'entretien avant de mettre l'alimentation sous tension. Conservez ce manuel qui vous sera toujours utile. Cette alimentation ne doit être installée que par du personnel qualifié et compétent. En cas de dommage ou dysfonctionnement, coupez immédiatement la tension d'alimentation et retournez l'appareil à l'usine pour vérification. ! L'alimentation ne contient pas de pièces échangeables Les données indiquées dans ce document servent uniquement à donner une description du produit et n'ont aucune valeur juridique. En cas de divergences, le texte anglais fait foi.

⚠ AVERTISSEMENT **Prendre en compte les points suivants, afin d'éviter toute détérioration électrique, incendie, dommage aux personnes ou mort:**

- Mettre l'alimentation hors tension avant toute intervention sur celle-ci et s'assurer qu'il n'y a pas risque de redémarrage.
- Ne pas ouvrir, modifier ou réparer l'alimentation.
- Ne pas faire fonctionner l'appareil dans un environnement humide ou dans un environnement où il peut y avoir de la condensation.
- Ne pas toucher le carter pendant le fonctionnement ou directement après la mise hors tension. Surface chaude risquant d'entraîner des blessures.

Lea primero! — Español

Conserve este manual como referencia para futuras consultas. La fuente de alimentación solo puede ser instalada y puesta en funcionamiento por personal cualificado. Por favor lea detenidamente este manual antes de conectar la fuente de alimentación. Si se produce un fallo o mal funcionamiento durante la operación, desconecte inmediatamente la tensión de alimentación. En ambos casos, el equipo debe ser inspeccionado en fábrica. La información presentada en este documento es exacta y fiable en cuanto a la descripción del producto y puede cambiar sin aviso. En casa de duda, prevalece el texto inglés.

⚠ ADVERTENCIA **Riesgo de descarga eléctrica, incendio, accidente grave o muerte:**

- Desconectar la tensión de red antes de trabajar en la fuente de alimentación. Evite una posible reconexión involuntaria.
- No realizar ninguna modificación o reparación de la unidad. No abrir la unidad.
- No usar el equipo en ambientes húmedos. No operar el equipo en ambientes donde se espere la formación de rocío o condensación.
- No tocar durante el funcionamiento ni inmediatamente después del apagado. El calor de la superficie puede causar quemaduras graves.

Leggere prima questa parte! — Italiano

Prima di collegare il sistema di alimentazione elettrica si prega di leggere attentamente le seguenti avvertenze. Conservare le istruzioni per la consultazione futura. Il sistema di alimentazione elettrica deve essere installato solo da personale competente e qualificato. Se durante il funzionamento si verificano anomalie o guasti, scollegare immediatamente la tensione di alimentazione. In entrambi i casi è necessario far controllare l'apparecchio dal produttore! I dati sono indicati solo a scopo descrittivo del prodotto e non vanno considerati come caratteristiche garantite dell'apparecchio. In caso di differenze o problemi è valido il testo inglese

⚠ AVVERTENZA **Il mancato rispetto delle seguenti norme può provocare folgorazione elettrica, incendi, gravi incidenti e perfino la morte:**

- Prima di eseguire interventi di installazione, di manutenzione o di modifica scollegare la tensione di rete ed adottare tutti i provvedimenti necessari per impedirne il ricollegamento non intenzionale.
- Non tentare di aprire, di modificare o di riparare da soli l'apparecchio.
- Non far funzionare l'apparecchio in un ambiente umido. Non far funzionare l'apparecchio in un ambiente soggetto alla formazione di condensa o di rugiada.
- Non toccare quando acceso e subito dopo lo spegnimento. La superficie calda può causare scottature.

Leia primeiro! — Português

Recomendamos a leitura cuidadosa das seguintes advertências e observações, antes de colocar em funcionamento a fonte de alimentação. Guarde as Instruções para futura consulta, em casos de dúvida. A fonte de alimentação deverá ser instalada apenas por profissionais da área, tecnicamente qualificados. Se por acaso, durante a utilização ocorrer algum defeito de funcionamento ou dano, desligue imediatamente a tensão de alimentação. Em ambos os casos, será necessária uma verificação na Fábrica! Os dados mencionados têm como finalidade somente a descrição do produto, e não devem ser interpretados como propriedades garantidas no sentido jurídico. Em caso de duvidas aplica-se o texto em inglês.

⚠ ATENÇÃO **A não observância ou o incumprimento dos pontos a seguir mencionados, poderá causar uma descarga elétrica, incêndios, acidentes graves ou morte:**

- Antes de trabalhos de instalação, manutenção ou modificação, desligue a tensão de alimentação, protegendo-a contra uma nova ligação involuntária.
- Não efectue nenhuma modificação ou tentativa de reparação no aparelho. Quando necessário contacte o seu distribuidor. Não abra o aparelho.
- Não usar o aparelho em ambientes húmidos. Não usar o aparelho em ambientes propensos a condensações.
- Não tocar enquanto estiver em funcionamento, nem após a desligar. A superficie poderá estar quente e provocar lesões.

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Product Description

The FPT500.241-002-101 is a stand-alone power supply for three-phase mains systems, which provides a stabilized and galvanically separated PELV/ES1 output voltage. The negative potential of the outputs is permanently connected to PE within the unit.

The device is incorporated in a housing rated for IP65 and IP67, which provides protection against electrical, mechanical and fire hazards.

Intended Use

This indoor use device is intended for commercial use, such as in industrial control, process control, monitoring, measurement or the like.

Do not use this device in equipment, where malfunctioning may cause severe personal injury or threaten human life without additional appropriate safety devices, that are suited for the end-application.

If used in a manner outside of its specification, the protection provided by the device may be impaired.

Do not connect the negative potential of the output to PE .

Installation Instructions

Install the device onto a flat surface with the terminals on the bottom of the device. Other mounting orientations require a reduction in output current.

The device is designed for pollution degree 3 areas in controlled environments.

Install the device on a large enough flat surface so that any sharp edges on the back cannot cause injury. Use 4 screws for wall mounting, 2 on top and 2 on bottom mounting holes. Recommended screw size M4.

The enclosure of the device provides a degree of ingress protection of IP65 and IP67 when installed with all mating connectors firmly connected.

The device is designed as “Class of Protection I” equipment according to IEC 61140. Do not use without a proper PE (Protective Earth) connection.

For TN,TT mains systems with earthed neutral and IT star mains systems with insulation monitoring the device is designed for overvoltage category III zones up to 2000m (6560ft) and for overvoltage category II zones up to 5000m (16400ft). For TN, TT, IT delta mains systems or IT star mains systems without insulation monitoring the device is intended for overvoltage category II zones up to 2000m (6560ft).

The device is designed to be safe in case of a single phase loss and does not require an external protection.

A disconnecting means shall be provided for the input of the device.

The device is designed for convection cooling and does not require an external fan. Do not obstruct airflow and do not cover ventilation fins!

The device is designed for altitudes up to 5000m (16400ft). Above 2000m (6560ft) a reduction in output current is required and the operation is limited according mains systems description above.

Keep the following minimum installation clearances: 50mm on top and bottom, 10mm on the front and 10mm left and right side.

The device is designed, tested and approved for branch circuits up to 20A (UL) and 32A (IEC) without additional protection device. If an external fuse is utilized, do not use circuit breakers smaller than 6A B- or C-Characteristic to avoid a nuisance tripping of the circuit breaker.

The maximum surrounding air temperature is +70°C (+158°F). The operational temperature is the same as the ambient or surrounding air temperature and is defined 2cm below the device.

The device is designed to operate in areas between 5% and 95% relative humidity.

Cleaning only with a damp cloth.

Functional Description

The output is electronically protected against no-load, overload and short circuit and can supply any kind of loads, including unlimited inductive and capacitive loads. If capacitors with a capacitance >100mF are connected, the unit might charge the capacitor in an intermittent mode.

Do not apply return voltages from the load to the output terminals higher than 35V.

The green Status LED reports an output above 90% of the adjusted voltage of a running device.

The DC OK relay monitors the output voltage and the contact is closed when the Status LED is on.

Contact ratings: 60Vdc 0.3A, 30Vdc 1A, 30Vac 0.5A for resistive loads.

The device is equipped with an over-temperature protection. In case of a high temperature, the output shuts down and starts automatically again after cooling off.

Do not parallel devices for higher output currents.

Do not connect the outputs of multiple devices in a series connection for higher output voltages.

In case of an internal defect, a redundant circuit limits the maximum output voltage to 32.5V. The output shuts down and automatically attempts to restart.

LED bargraph and push-buttons:

The LED bar has two functions included. In normal operation, the LED bar displays the actual output power as percentage value. 100% equals an output power of 500W. LEDs up to and including 100% are green, the LEDs above 100% are orange.

The second function of the LED bar is to display the set point of the output voltage. Therefore, press the “Set Mode” button for 3s. All LEDs will be on for a short period of time and the one, which equals the output voltage, remains on.

To change the output voltage, press the “Set Mode” button for 1s and change the output voltage by pressing the up or down buttons. The voltage can be set to the following predefined values: 24V, 24.5V, 25V, 25.5V, 26V, 26.5V, 27V and 28V as printed aside the LEDs. The Status LED indicates 24V. The voltage is set immediately and the value stored until the next change.

Without further pressing of push-buttons, the LED bar will return to output power mode after 15s.

Mating connectors:

For the mating input voltage connector (X1) use the connector HANQ4/2 from Harting consisting of four parts. Use order numbers 19 12 008 0429 (1x housing), 09 12 006 3141 (1x insert), 09 32 000 6204 (4x crimp contacts) and 19 12 000 5156 (1x cable gland). Pin assignment for the input connector (X1): Pin 1 for L1, Pin 2 for L2, Pin 3 for L3 and the Pin with the PE symbol for PE.

For the mating DC OK signal connector (X2) use a standards M12 A-coded 5 pin female connector.

Pin assignment for the DC OK connector (X2): Pin 1 and Pin 4 for relay contact.

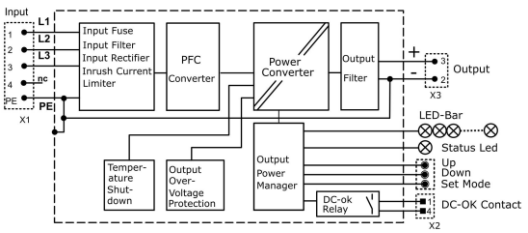
The output voltage terminal (X3) utilizes the connector HAN Q4/0 from the company Harting consisting of three parts. Use order number 19200030427 for the housing, order number 09120043051 for the insert and order number 09320006105 for the crimp contacts with a cross section of 2.5mm2 (AWG 14) or 09320006107 for the crimp contacts with a cross section of 4mm2 (AWG 12). Pin assignment for the output connector (X3): Pin 1 not connected, Pin 2 for negative output pole, Pin 3 for the positive output pole and the Pin 4 is not connected.

Technical Data

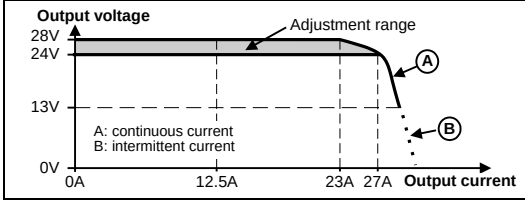
All values are typical figures specified at 3x 400Vac 50Hz input voltage, symmetrical phase voltages, 24V, 500W output load, 25°C ambient temperature and after a 5 minutes run-in time unless otherwise noted.

Output voltage	DC 24V	Nominal
Adjustment range	24 – 28Vdc	Factory setting 24.5V
Output power	Continuous:	
	600W	At +45°C ambient
	500W	At +55°C ambient
	350W	At +70°C ambient
	Short-term, up to 5s:	
	1000W	Below +55°C ambient
	700W	At +70°C ambient
	Derate linearly between +45°C and +70°C	
Input voltage AC	3AC 380 - 480V	±15%
Mains frequency	50 – 60Hz	±6%
Input current AC	1.1 / 0.9A	At 3x400 / 480Vac
Power factor	0.94 / 0.95	At 3x400 / 480Vac
Input inrush current	1.5 / 1.5A peak	At 3x400 / 480Vac, temp. independent
Efficiency	95.8 / 95.6%	At 3x400 / 480Vac
Losses	20.8 / 23.0W	At 3x400 / 480Vac
Hold-up time	24 / 24ms	At 3x400 / 480Vac
Temperature range	-25 to +70°C	
Size (LxWxH)	183x182x59mm	Without connectors
Weight	1200g / 2.7lb	

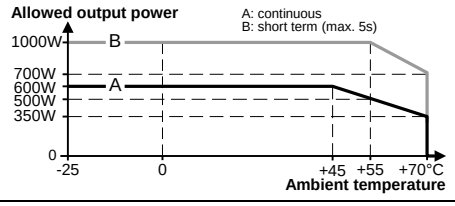
Functional Diagram



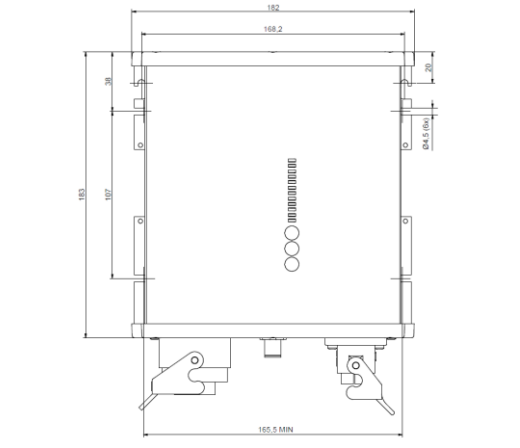
Output Characteristic



Temperature Range



Hole Pattern for Mounting



All dimensions in mm; connectors X1 to X3 from left to right