



### 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.

#### **WARNING** 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 dúvidas 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 superfície poderá estar quente e provocar lesões.

## Product Description

The FPT300.246-042-101 is a stand-alone power supply for three-phase mains systems, which provides a stabilized and galvanically separated PELV/ES1 output voltage at 4 outputs. The negative potential of the outputs is permanently connected to PE within the unit.

The outputs fulfill the requirements for a limited power source according to NEC Class2.

The housing is rated as IP54 according IEC60529 and 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.

WARNING: Risk of fire or electric shock. Do not interconnect output terminals.

## Installation Instructions

Install the device with the terminals on the bottom of the device. Other mounting orientations require a reduction in output current. When installing watch out for the risk of injury from sharp edges and assure that when installed any sharp edges on the back cannot be accessed and cannot cause injury.

The power supply is mounted on a bracket with 4 screws of size M4 (UNC 8-32). For mounting the bracket use screws of equal or higher strength.

The enclosure of the device provides a degree of ingress protection of IP54 when installed with all mating connectors firmly connected. The enclosure provides no protection against spilled liquids.

The device is designed for pollution degree 2 areas in controlled environments. No condensation or icing is allowed.

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 without a fan. Do not obstruct airflow.

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: 0mm on top, 30mm on the bottom, 15mm on the front and 0mm 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.

Make sure that you only use plugs and cables rated for the device output current and the required temperature range. Follow all local and national codes for installation.

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

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

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

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 inductive and capacitive loads. If capacitors with a capacitance >20mF are connected to one output, this output might switch off after turning the unit or the output on or connecting the load.

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 and no output tripped due to overcurrent or overtemperature.

The OUT-OK contact is closed when the Status LED is green and all outputs according settings.

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

The device has an internal overtemperature protection. If the temperature is too high the unit shuts down and starts automatically again after cooling off. Each output will get the same state as before the shutdown.

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.

Do not parallel devices or outputs for higher output currents.

### LED bar and push-buttons:

The LED bar normally displays the actual output power as percentage value. 100% equals an output power of 300W. LEDs up to and including 100% are green, the LEDs above 100% are orange. With the up and down button you can see the actual power per channel (orange LED indicates the currently selected channel). If you press the "Set Mode" button for 3 seconds all LEDs light up briefly and one LED stays on, showing the actual output voltage. With pressing the up or down button you can change the set voltage to the predefined values: 24V, 24.5V, 25V, 25.5V, 26V, 26.5V, 27V and 28V as printed aside the LEDs. The voltage is set immediately and the value stored until the next change. If no button is pressed for 15s unit returns to the normal state the LED bar will return to show the output power.

### Mating connectors:

Use a Harting HANQ5/0 female plug to connect to the input voltage connector (X1). 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.

Use a standard M12 A-coded 5 pin female plug to connect to the OUT-OK signal connector (X2).

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

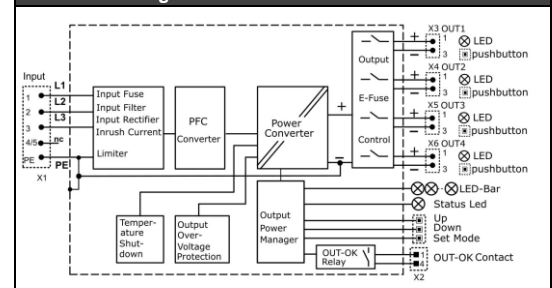
Use a standard M12 A-coded 5 pin male plug to connect to the output connectors (X3). Pin 1 for positive output pole, Pin 3 for the negative output pole and the Pin 2 and 4 not connected.

## Technical Data

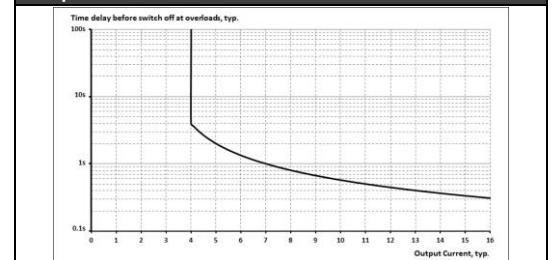
All values are typical figures specified at 3x 400Vac 50Hz input voltage, symmetrical phase voltages, 24V, 300W output load, 25°C ambient temperature and after a 5 minutes run-in time unless otherwise noted.

|                             |   |                                      |
|-----------------------------|---|--------------------------------------|
| <b>Output voltage</b>       | DC 24V                                  | Nominal                              |
| <b>Adjustment range</b>     | 24 – 28Vdc                              | Factory setting 24.5V                |
| <b>Output power</b>         | Continuous:                             |                                      |
|                             | 300W                                    | Below +55°C ambient                  |
|                             | 150W                                    | At +70°C ambient                     |
|                             | Derate linearly between +55°C and +70°C |                                      |
|                             | NEC Class 2                             |                                      |
| <b>Number of outputs</b>    | 4                                       |                                      |
| <b>Current per output</b>   | 3.9 -3.4A                               |                                      |
| <b>Input voltage AC</b>     | 3AC 380 - 480V                          | ±15%                                 |
| <b>Mains frequency</b>      | 50 – 60Hz                               | ±6%                                  |
| <b>Input current AC</b>     | 0.5 / 0.42A                             | At 3x400 / 480Vac                    |
| <b>Power factor</b>         | 0.9 / 0.9                               | At 3x400 / 480Vac                    |
| <b>Input inrush current</b> | 1.5 / 1.5A peak                         | At 3x400 / 480Vac, temp. independent |
| <b>Efficiency</b>           | 95.1 / 94.8%                            | At 3x400 / 480Vac                    |
| <b>Losses</b>               | 15.5 / 16.1W                            | At 3x400 / 480Vac                    |
| <b>Hold-up time</b>         | 25 / 25ms                               | At 3x400 / 480Vac                    |
| <b>Temperature range</b>    | -25 to +70°C                            |                                      |
| <b>Size (LxWxH)</b>         | 272x182x70mm                            |                                      |
| <b>Weight</b>               | 1550g / 3.4lb                           |                                      |

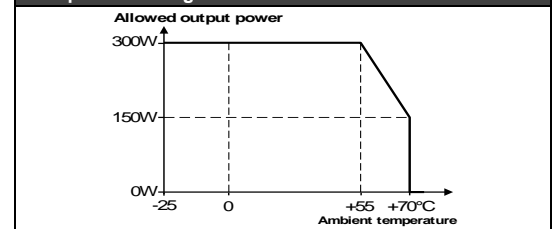
## Functional Diagram



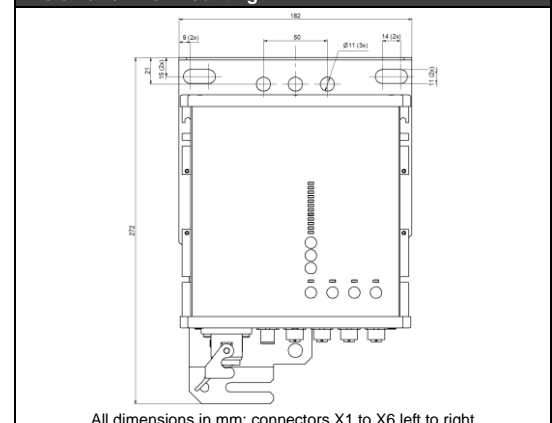
## Output Characteristic



## Temperature Range



## Hole Pattern for Mounting



All dimensions in mm; connectors X1 to X6 left to right