

Short Form Installation User's Manual



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Models	NPSM121IP-241IP – Single Phase / DC input IP65 Power Supply		
File No.:	I.M.NPSM121IP-241IP	Rev.:	1.1



Use latest device Documentation, Software and Firmware to ensure reliable operation of the system
(downloadable from www.nextys.com)



IP65

READ THIS CAREFULLY BEFORE INSTALLATION!	LEGGERE ATTENTAMENTE PRIMA DELL'INSTALLAZIONE!	A LIRE ATTENTIVEMENT AVANT L'INSTALLATION!
<p>Before operating, read this document thoroughly and retain it for future reference.</p> <p>Non-respect of these instructions may reduce performances and safety of the devices and cause danger for people and property. The products must be installed, operated, serviced and maintained by qualified personnel in compliance with applicable standards and regulations.</p> <p>Don't open the device, it does not contain replaceable components, the tripping of the internal fuse (if included) is caused by an internal failure.</p> <p>Don't repair or modify the device, if malfunction or failure should occur during operation, send unit to the factory for inspection. No responsibility is assumed by Nextys SA for any consequences deriving from the use of this material.</p>	<p>Prima dell'installazione, leggere attentamente questo documento istruzioni e conservarle per future consultazioni.</p> <p>L'inosservanza delle presenti istruzioni può compromettere le caratteristiche e la sicurezza dell'apparecchio e causare pericolo per le persone e le cose.</p> <p>Il prodotto deve essere installato, utilizzato e riparato da personale qualificato e nel rispetto delle normative vigenti.</p> <p>Non aprire il prodotto, esso non contiene componenti sostituibili, il guasto del fusibile interno (se previsto) è causato da un guasto interno.</p> <p>Non tentare di riparare o modificare il prodotto, se durante il funzionamento si verificano guasti o anomalie, inviarlo al produttore per il controllo.</p> <p>Nextys SA non si assume nessuna responsabilità per qualunque conseguenza derivante dall'uso di questo materiale.</p>	<p>Lire ces instructions avant l'installation, conserver ce manuel pour référence future.</p> <p>Défaut de se conformer à ces instructions peut affecter les caractéristiques et la sécurité du dispositif, et causer du danger aux personnes ou aux biens.</p> <p>Les produits doivent être installés, exploités et entretenus par du personnel qualifié et en conformité avec les règlements.</p> <p>N'ouvrez pas le produit, il ne contient aucune pièce réparable, le déclenchement du fusible interne (le cas échéant) est causé par un défaut interne. Ne pas essayer de réparer ou modifier le produit ; si des défaillances se produisent pendant le fonctionnement, retourner le produit au fabricant pour inspection. Nextys SA n'assume aucune responsabilité des conséquences éventuelles découlant de l'utilisation des produits.</p>
CAUTION	ATTENZIONE	AVERTISSEMENT
<p>RISK OF BURNS, EXPLOSION, FIRE, ELECTRICAL SHOCK, PERSONAL INJURY.</p> <p>Never carry out work on live parts! Danger of fatal injury! The product's enclosure may be hot, allow time for cooling product before touching it. Do not allow liquids or foreign objects to enter into the products.</p> <p>To avoid sparks, do not connect or disconnect the device before having previously turned-off input power and wait for internal capacitors discharge (minimum 1 minute).</p>	<p>RISCHIO USTIONI, ESPLOSIONE, INCENDIO, SCOSSA, LESIONI GRAVI.</p> <p>Non effettuare mai operazioni sulle parti sotto tensione! Pericolo di lesioni letali! Il contenitore può scottare, lasciar quindi raffreddare il dispositivo prima di toccarlo. Non far entrare liquidi o oggetti estranei nel dispositivo.</p> <p>Per evitare scintille, non collegare o scollegare l'apparecchiatura prima di avere tolto tensione di ingresso e prima che sia avvenuta la scarica dei condensatori interni (min. 1 minuto).</p>	<p>RISQUE DE BRULURES, EXPLOSION, INCENDIE, ELECTROCUTION, DOMMAGE AUX PERSONNES.</p> <p>Ne jamais effectuer des opérations sur les parties sous tension! Danger de mort! Le boîtier peut produire des brûlures, le laisser refroidir avant de toucher l'appareil. Ne faire pas pénétrer des liquides ou des corps étrangers dans l'appareil. Pour éviter des étincelles, ne pas connecter ou déconnecter l'équipement jusqu'à ce que la tension d'entrée a été supprimée et avant qu'il n'ait eut lieu la décharge des condensateurs internes (minimum 1 minute).</p>
INTENDED USE	USO PREVISTO	UTILISATION
<p>These are isolated devices suitable for SELV and PELV circuitry and are designed to be mounted on DIN rail and installed inside a protective enclosure. They are intended for general use such as in industrial control, communication, and instrumentation equipment.</p> <p>Don't use these devices in applications where malfunction may cause injury or death.</p>	<p>I dispositivi sono isolati, adatti per applicazioni SELV e PELV, sono dotati di aggancio per il montaggio su guida DIN all'interno di quadri elettrici o contenitori di protezione, per l'utilizzo con controllori industriali, unità di comunicazione o apparecchi di misura.</p> <p>Non utilizzare in applicazioni in cui un eventuale guasto può comportare rischio di lesioni o di morte.</p>	<p>Les produits sont isolés, appropriés pour les circuits TBTS et TBTP et sont équipés d'un crochet pour montage sur rail DIN dans des armoires ou conteneurs de protection, pour utilisation avec les contrôleurs industriels, des modules de communication ou des unités de mesure.</p> <p>Ne pas utiliser ces dispositifs dans une application où un dysfonctionnement pourrait entraîner le risque des blessures ou de mort.</p>
ENVIRONMENTAL CHARACTERISTICS	CARATTERISTICHE AMBIENTALI	CARACTÉRISTIQUES ENVIRONNEMENTALES
<p>Installation in a Pollution Degree 2 environment, Overvoltage Category I, according to IEC60664-1.</p> <p>Do not use in wet area or subject to moisture.</p> <p>Carefully recycle the product and related batteries according to local regulations.</p>	<p>Usare in ambienti con Grado di Inquinamento 2 e Categoria di Sovratensione I, secondo IEC60664-1.</p> <p>Non far funzionare l'apparecchio in un ambiente umido o soggetto a formazione di condensa. Riciclare il prodotto e le batterie collegate, nel rispetto delle normative locali vigenti.</p>	<p>Utiliser les produits dans des environnements avec degré de pollution 2, catégorie de surtension I selon IEC60664-1.</p> <p>Ne pas employer l'appareil dans un environnement humide ou soumis à la condensation. Recycler les produits et les batteries, conformément à la réglementation locale..</p>

Declaration of Conformity



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This Declaration of Conformity is suitable to the European Standard EN45014 "General criteria for supplier's declaration of conformity". We declare under our sole responsibility that the device included in this box, has passed all processing inspections and the final test and it is in conformity with the product requirements, including all reference codes and supply specifications.

ROHS compliance: the product respects the EC requirements related to ROHS substances, according to "Restriction of Hazardous Substances" as per document 2011/65/EU.

REACH compliance: the product respects the EC requirements related to REACH SVHC directive (2015).

Note: all the reported information comes from our suppliers, NEXTYS SA. has not run any test to evaluate if the specific elements are present.

All indicated devices are designed according to the latest Reference standards, if not expressly indicated through the official documents or files, they have been tested through our internal pre-compliance testing. Consult directly on www.nextys.com the reference standards applied to each model.

Code	Description
NPSM121IP	Single phase with integrated PFC switching power supply IN 120 - 240Vac (110 - 345Vdc) / OUT 24Vdc - 5A
NPSM241IP	Single phase with integrated PFC switching power supply IN 120 - 240Vac (110 - 345Vdc) / OUT 24Vdc - 10A + ORing circuit

Certifications and approvals



Reference standards

2014/35/EU (2014)	(Low Voltage Directive)
2014/30/EU (2014)	(EMC directive)
EN60950-1	(Safety Standards)
UL508	(Safety Standards)
IEC60664-1	(Safety Standards)
EN50178	(Safety Standards)
EN61000-6-2	(Generic immunity standard for industrial environments)
- EN61000-4-2	(Electrostatic discharge immunity test)
- EN61000-4-3	(Radiated, radio-frequency, electromagnetic field immunity test)
- EN61000-4-4	(Electrical fast transient/burst immunity test)
- EN61000-4-5	(Surge immunity test)
EN61000-6-3	(Generic emission standard for residential environments)
- EN55022	(CISPR22 - EMC)
- EN55011	(CISPR11 - EMC)
- EN61000-3-2	(Limits for harmonics current emissions)

Date: 20.04.2017

Place: Quartino, Switzerland

The product manager

M. Ciorica

Marius Ciorica

INSTRUCTIONS
1) Description: DIN rail mountable primary switched-mode IP65 power supply with 90...264Vac - 110...345Vdc input, suitable for single phase main line and DC line.
2) Installation: use DIN-rails according to EN 60715. Installation should be made vertically (see Fig. 7). For better device stability fix the rail to the wall close to the point where the device is to be mounted. In order to guarantee sufficient convection, we recommend observing a minimum distance to other modules (see Fig.6).
3) Connections: the device is equipped with screw terminals header. To avoid sparks, do not connect or disconnect the connectors before having previously turned-off input power and waited for internal capacitors discharge (minimum 1 minute). Use appropriate copper cables of indicated cross section, designed for an operating temperature of: 60°C for ambient up to 45°C 75°C for ambient up to 60°C 90°C for ambient up to 70°C. Strip the connecting ends of the wires according to the indication as shown below and ensure that all strands of a stranded wire enter the terminal connection (Fig.2).
4) Input protection: the device input is provided with varistors against overvoltage. Input is provided with internal fuses 3.15AT/250Vac (NPSM1211P) or 6.3AT/250Vac (NPSM2411P), thus an external short circuit/overcurrent protection is recommended by the end user (see Fig.3). Surge protection: it is strongly recommended to provide external surge arresters according to local regulations.
5) AC input connection: the device can be connected to single-phase AC lines with U_{in} 120...240 Vac (see Fig.4).
6) DC input connection: connect L terminal to + pole, N terminal to - pole and \ominus terminal to GND. Rated voltage 110...345Vdc. The device is also suitable for photovoltaic or wind turbine applications.
7) Output connection: The device is suitable for SELV and PELV circuitry.
8) Parallel connection for redundancy: Model NPSM2411P has an integrated ORing circuit. For redundant connection, use the model NPSM2411P or an external isolating diode must be used.
9) Output protection: the device is protected against overload (OL) / short circuit (SC) / overvoltage (OV) / overtemperature (OT). OL and SC: are controlled by a hiccup auto-reset protection with the following behaviour: OL behaviour: Max. OL = $I_n \times 1.5$ with constant output voltage for 5s and after that time the device starts an ON/OFF cycle (hiccup mode). SC behaviour NPSM1211P: the device supplies the indicated short circuit current peak current for 60ms, after that time it switches OFF for 5s. The ON/OFF cycle (hiccup mode) is repeated continuously. The output voltage drops to a voltage value depending on the impedance of the failed load circuit. SC behaviour NPSM2411P: the device supplies $I_n \times 1.5$ for 5s, after that time it switches OFF for 10s. The ON/OFF cycle (hiccup mode) is repeated continuously. The output voltage drops to a voltage value depending on the impedance of the failed load circuit. Output OV circuit protection: the output is protected against potential OV due to internal malfunction or coming from the load for $U_{out} \geq U_{nom} \times 1.2 - 1.3$, depending on the model. OT protection: turn OFF the device if the internal temperature exceeds a safe limit. The device restarts automatically after cooling down. To recover to normal operation reduce air temperature surrounding the power supply, increase cooling or reduce load.
10) Feeding DC motors: it is possible to feed DC motors considering that when a motor starts-up under effort its consumption is much higher than the nominal current and it can trigger the overcurrent protection. NOTE: motors can generate high conducted noise on the DC line. Therefore it is not recommended to feed on the same line motors and equipment sensitive to noise.
11) Warranty: power supplies are guaranteed free from factory defects for the time specified in the "Sales Conditions". Failures caused by misuse, external and/or abnormal events (i.e. overvoltage, over temperatures) or non-respect of above parameters and standards, are not covered by warranty. Opening the housing of the product makes warranty to be no longer valid.
In order to improve the products Nextys SA reserves the right to change product specifications, ratings and data without previous advice.

Connection (Fig.1)

	<ol style="list-style-type: none"> AC/DC Input DC Output (Load) Diagnostic Output (dry contact, NC output OK) Green LED: Power ON <p>Input AC Line:</p> <ul style="list-style-type: none"> L = Line (2, AD/DC input connector) N = Neutral (1, AD/DC input connector) \ominus = earth ground (3, AD/DC input connector) <p>Input DC Line:</p> <ul style="list-style-type: none"> L = + Positive DC (2, AD/DC input connector) N = - Negative DC (1, AD/DC input connector) \ominus = earth ground (3, AD/DC input connector) <p>Output:</p> <ul style="list-style-type: none"> + = Positive DC (4, DC output connector) - = Negative DC (3, DC output connector) <p>Signalling:</p> <p>DC OK: dry contact</p> <ul style="list-style-type: none"> NO (2, DC output connector) COM (1, DC output connector)
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Recommended connecting cable (Fig.2)

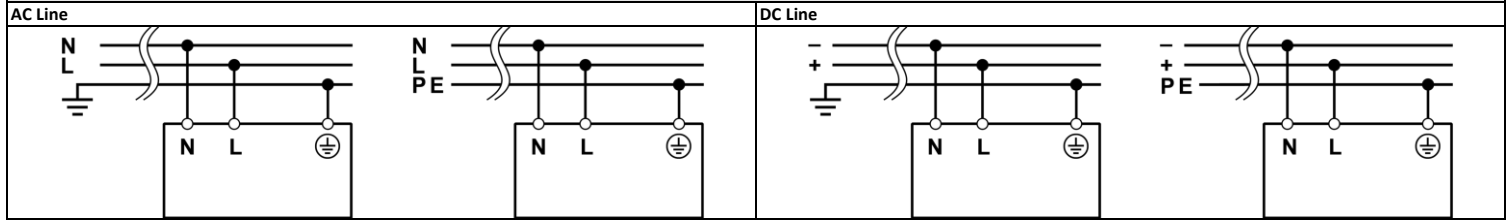
	<p>Recommended Tightening torque</p> <p>Input / output connections 0.5-0.6Nm 4.42-5.30 lbf in</p>		<p>Input / output connections Solid: 1.5mm² / 16AWG Stranded: 1.5mm² / 16AWG L: 6.0-7.5mm / 0.24-0.30in</p>
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Input protection (Fig.3)

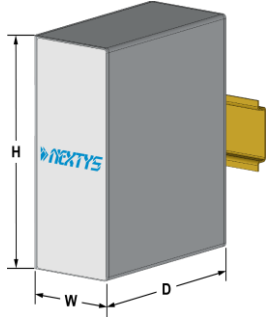
Fuse 4AT or MCB4A C curve (NPSM1211P) or fuse 10AT or MCB10A C curve (NPSM2411P).
For USA and Canada, use the fuse type closest to the European equivalent type.

Surge Protection: it is strongly recommended to provide external surge arresters (SPD) according to local regulations.

Input connection (Fig.4)

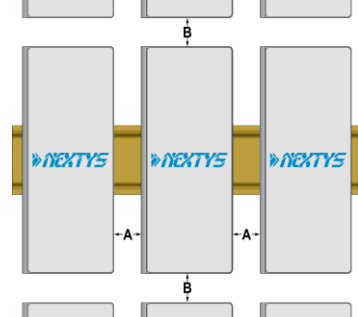


Dimensions (Fig.5)



Dimension	mm
W	201
H	131
D	75.4

Distances (Fig.6)



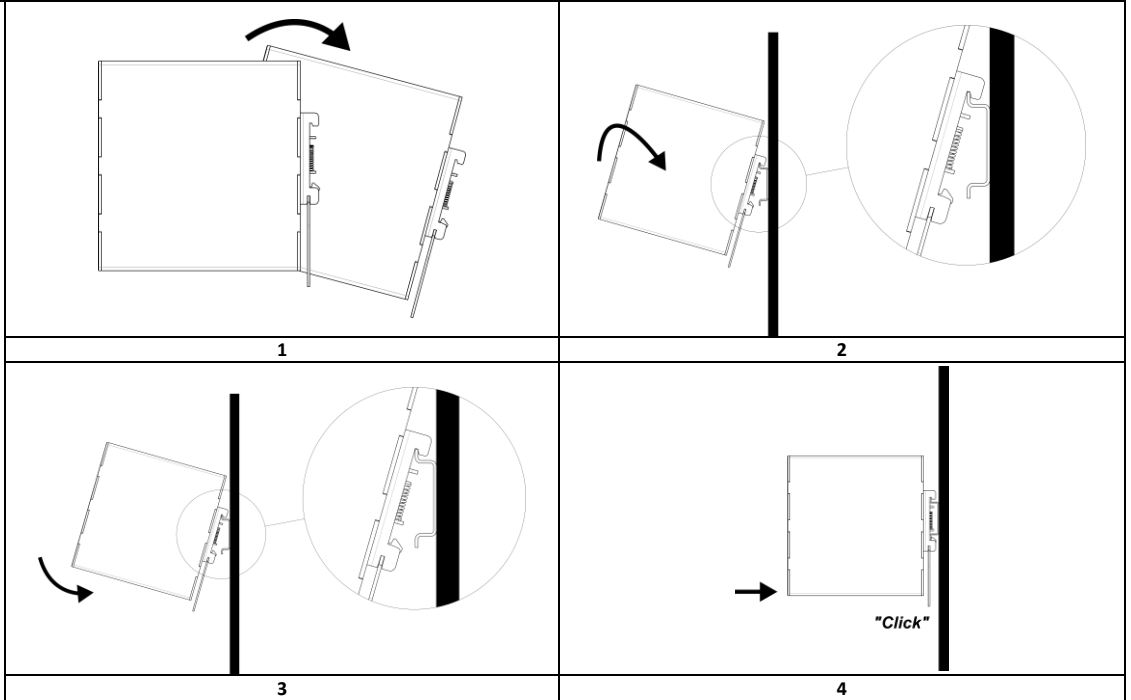
Distance	mm
A	20
B	50

Mounting / Dismounting Instructions (Fig.7)

For DIN rail mounting according to IEC 60715 TH35-7.5(-15). Mounting as shown in figure, with input / output terminals on lower side, with suitable cooling and maintaining a proper distance between adjacent devices as specified in the User manual.

Mounting

1. Tilt the unit slightly backwards.
2. Fit the unit over the top edge of the rail.
3. Slide it downward until it hits the stop.
4. Press against the bottom for locking.



Dismounting

1. Pull down the slide clamp lever.
2. Tilt the unit upward.
3. Unhook the unit from the rail.

