

DE Spannungsversorgung Compact DC USV, 240 Watt
 EN Power supply Compact DC USV, 240 watt
 FR Alimentation en tension Compact DC USV, 240 watts
 ES Fuente de alimentación Compact DC USV, 240 vatios



Art.-Nr./ Part-No./ Réf./ N.º art.: Typ/ Type/ Tipo/ Tipo:
 723110 CNUPS24



Basic Battery Charger and DC UPS Module



■ **Main Features:**

- Low cost DC-UPS with charging of a 24 Vdc battery
- Suitable for power supplies with adjustable output
- Allows to feed the load and to charge the battery simultaneously
- Built-in battery overcurrent protection fuse
- Battery deep discharge protection
- To be used with lead acid and lithium batteries (compatible with lead acid batteries)
- Instantaneous LOAD switch to BACKUP mode

INDEX	
	Page
Installation Requirements	2
Declaration of Conformity	2
User Instructions	3
Connections	4
Dimensions	4
Distances	4
Mounting	4
Dismounting	5
Input Connections	5
Environment	5
Accessory Device	5

Technical Support: Tel. +49 7151 6053-0 Fax +49 7151 6053-277 E-Mail: info@luetze.de

Art.-Nr./ Part-No./ Réf./ N.º art.: Typ/ Type/ Type/ Tipo:
723110 CNUPS24

DE VOR DER INSTALLATION SORGFÄLTIG LESEN!

Lesen Sie dieses Dokument sorgfältig durch, bevor Sie das Gerät in Betrieb nehmen, und bewahren Sie es zum späteren Nachschlagen auf. Die Nichtbeachtung dieser Anweisungen kann die Leistung und Sicherheit des Geräts beeinträchtigen und eine Gefahr für Personen und Sachen darstellen. Die Produkte müssen von qualifiziertem Personal in Übereinstimmung mit den geltenden Normen und Vorschriften installiert, betrieben, gewartet und gepflegt werden. Öffnen Sie das Gerät nicht, es enthält keine austauschbaren Komponenten, das Auslösen der internen Sicherung (falls vorhanden) wird durch einen internen Fehler verursacht. Reparieren oder modifizieren Sie das Gerät nicht, falls während des Betriebs eine Störung oder ein Ausfall auftritt, senden Sie das Gerät zur Überprüfung an das Werk zurück.
LÜTZE übernimmt keine Verantwortung für Folgen, die sich aus dem Gebrauch dieses Gerätes ergeben.

VORSICHT: VERBRENNUNGS-, EXPLOSIONS-, BRAND-, STROMSCHLAG- UND VERLETZUNGSGEFAHR.

Niemals Arbeiten an spannungsführenden Teilen durchführen! Es besteht Lebensgefahr! Das Gehäuse des Produkts kann heiß sein, lassen Sie das Produkt abkühlen, bevor Sie es berühren. Achten Sie darauf, dass keine Flüssigkeiten oder Fremdkörper in das Gerät eindringen. Um Funkenbildung zu vermeiden, schließen Sie das Gerät erst an oder trennen Sie es ab, nachdem Sie die Stromversorgung ausgeschaltet haben und warten Sie, bis sich die internen Kondensatoren entladen haben (*mindestens 1 Minute*).

Funkstörungen!

Dies ist ein elektrisches Gerät gemäß EN55032, Klasse A. Es kann in Wohngebieten Funkstörungen verursachen.

FR LIRE ATTENTIVEMENT AVANT L'INSTALLATION !

Lisez attentivement ce document avant d'utiliser l'appareil et conservez-le pour toute référence ultérieure. Le non-respect de ces instructions peut affecter les performances et la sécurité de l'équipement et présenter un danger pour les personnes et les biens. Les produits doivent être installés, utilisés, entretenus et réparés par du personnel qualifié, conformément aux normes et réglementations en vigueur. Ne pas ouvrir l'appareil, il ne contient aucun composant remplaçable, le déclenchement du fusible interne (s'il y en a un) est dû à un défaut interne. Ne pas réparer ou modifier l'appareil, en cas de dysfonctionnement ou de panne en cours de fonctionnement, renvoyer l'appareil à l'usine pour inspection. **LÜTZE n'assume aucune responsabilité pour les conséquences résultant de l'utilisation de cet appareil.**

ATTENTION : RISQUES DE BRÛLURES, D'EXPLOSION, D'INCENDIE, D'ÉLECTROCUTION, DE BLESSURES.

Ne jamais effectuer de travaux sur des pièces sous tension ! Risque de blessure mortelle ! Le boîtier de l'appareil peut être chaud. Laissez refroidir l'appareil avant de le toucher. Ne laissez pas de liquides ou d'objets étrangers pénétrer dans les produits. Pour éviter les étincelles, ne pas connecter ou déconnecter l'appareil avant d'avoir préalablement coupé l'alimentation et attendu que les condensateurs internes se déchargent (*minimum 1 minute*).

Interférences radio !

Il s'agit d'un appareil électrique conforme à la norme EN55032, classe A. Il peut provoquer des interférences radio dans les zones résidentielles.

EN READ THIS CAREFULLY BEFORE INSTALLATION!

Read this document carefully before operating the equipment and retain it for future reference. Failure to follow these instructions may affect the performance and safety of the equipment and may present a hazard to persons and property. Products must be installed, operated, serviced and maintained by qualified personnel in accordance with applicable standards and regulations. Do not open the equipment, it does not contain any replaceable components, the tripping of the internal fuse (if any) is caused by an internal fault. Do not repair or modify the unit, if any malfunction or failure occurs during operation, return the unit to the factory for inspection.
LÜTZE assumes no responsibility for consequences resulting from the use of this device.

CAUTION: RISK OF BURNS, EXPLOSION, FIRE, ELECTRICAL SHOCK, PERSONAL INJURY.

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. 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*).

Radio interference!

This is an electrical appliance according to EN55032, class A. It may cause radio interference in residential areas.

ES LEA ATENTAMENTE ESTE DOCUMENTO ANTES DE LA INSTALACIÓN

Lea atentamente este documento antes de utilizar el equipo y consérvelo para futuras consultas. El incumplimiento de estas instrucciones puede afectar al rendimiento y la seguridad del equipo y representar un peligro para las personas y los bienes. Los productos deben ser instalados, utilizados, reparados y mantenidos por personal cualificado de acuerdo con las normas y reglamentos aplicables. No abra el equipo, no contiene componentes sustituibles, la activación del fusible interno (si lo hubiera) se debe a un fallo interno. No repare ni modifique el equipo, si se produce alguna avería o fallo durante el funcionamiento, devuelva el equipo a la fábrica para su inspección. **LÜTZE no asume ninguna responsabilidad por las consecuencias derivadas del uso de este aparato.**

PRECAUCIÓN: RIESGO DE QUEMADURAS, EXPLOSIÓN, INCENDIO, DESCARGA ELÉCTRICA, LESIONES PERSONALES.






No trabaje nunca en piezas bajo tensión. ¡Peligro de lesiones mortales! La carcasa del producto puede estar caliente, deje tiempo para que se enfríe el producto antes de tocarlo. No permita que entren líquidos u objetos extraños en los productos. Para evitar chispas, no conecte ni desconecte el aparato sin haber desconectado previamente la alimentación de entrada y esperar a que se descarguen los condensadores internos (*minimo 1 minuto*).

Interferencias de radio.

Este es un aparato eléctrico conforme a la norma EN55032, clase A. Puede causar interferencias de radio en zonas residenciales.

DECLARATION OF CONFORMITY

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/UE
REACH compliance: the product respects the EC requirements related to REACH SVHC directive (2015)
Note: all the reported information comes from our suppliers, LÜTZE 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.luetze.com the reference standards applied to each model.**

Code	Description
NUPS24	Battery Charger and DC UPS module IN 26 – 28.5Vdc / OUT 20 - 28 Vdc 10A
Certifications and approvals	    

Technical Support: Tel. +49 7151 6053-0 Fax +49 7151 6053-277 E-Mail: info@luetze.de

Art.-Nr./ Part-No./ Réf./ N.º art.: Typ/ Type/ Type/ Tipo:
723110 **CNUPS24**

USER INSTRUCTIONS

- 1) Description:** DIN rail mountable primary switched-mode power supply with 90...264Vac (110...345Vdc) input, suitable for Single phase main line and DC line.
- Functions:**
- **Battery +:** connection to battery PLUS
 - **Battery -:** connection to battery MINUS
 - **PS OK connector:** connection to SPDT contact for operating status/failure remote alarm (P.S. OK signal)
 - **Load +/-:** connection to load PLUS /MINUS
 - **IN +/-:** connection to power supply output PLUS /MINUS
 - **Battery fuse:** protects the battery and its cables against dangerous over currents. 15A Mini car Blade Fuse factory supplied is the max. allowed value, it can be replaced with a lower value fuse for a better protection with small batteries.
 - **Note:** if the fuse blows and if the module is fed only by the battery and without any voltage connected to IN+, IN- terminals, all LEDs of the module are turned off.
 - **Charging circuitry:** regulates and controls battery charging current. 2A or 4A charging current can be selected (see Fig.7). It's recommended to use 2A with battery capacity up to 20Ah and (if a faster charging time is not required) and 4A current with battery capacity 20-45Ah max.
 - **PS OK:** green LED, when it lights indicates that power supply is OK and that it is feeding the load and keeping battery under charge too.
 - **PS OK off:** indicates either that the power supply is turned off for AC mains black-out, or is disconnected from the AC mains, or that its output is overloaded and thus output is turned off for a short circuit - overload, or that the power supply failed.
 - **LOAD OK:** yellow LED, when it lights on indicates that the load receive power, either from the P.S. (PS OK LED On) or from battery (PS OK LED Off).
 - **BATT. OK:** green LED, with the power supply turned off or disconnected indicates that the battery is connected and charged.
 - **Attention:** with the power supply connected and active BATT. OK is always turned on even if the battery is not connected.
 - **BATT. LOW:** red LED, indicates that the battery is charged, increasing current required by the load and/or increasing the battery discharge. BATT. LOW LED lights on together with BATT OK, and its light intensity can vary depending on current required by the load, or blink if loads are switched on / off, due to unavoidable battery voltage variations depending on applied load. When BATT. LOW LED is lit, it is recommended to safely shut down the load, in order to avoid unexpected power loss.
 - **Failure contact:** at 1A/24V SPDT contact switches when the battery starts back-up feed of the load. The remote signal informs that the system is no more fed by the DC power supply e.g. for a fuse failure or for a power supply failure, thus giving a warning even if there is not a general and visible black-out but only a local failure.
- 723110 restart after a long duration black out with low battery. In such condition the module has disconnected the battery from the load (to prevent total discharge and thus battery damage). It can be started up only by feeding IN+, IN- with a 24Vdc source (e.g. the power supply or a battery). By connecting only the discharged battery to BATT. +/- terminals the module cannot be restarted. If the module is feeding the load from the back-up battery and if a short circuit makes the battery protection fuse to blow, the module can be re-started (after fuse replacement) only by first connecting a 24Vdc power source to IN+, IN- terminals.
- 2) Installation:** use DIN-rails according to EN60715. Installation should be made vertically (see Fig.4). 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.3). The device is provided with a thermal protection; a limited air flow can cause the thermal protection tripping. The SMPS automatically restarts after cooling. To get normal operation reduce the temperature of the air surrounding the power supply, increase the ventilation or reduce the load (see Fig.8)
- Warning!**
 Follow the connection procedure carefully, not respecting this procedure could irreversibly damage the device (see Fig.1 as reference).
- Connect BATT+ and BATT- of the supplied plug connector to the own battery/ies, respecting the polarity.
 - Plug the BATT+/- connector to the device, check that the red "REVERSE POLARITY" LED is OFF; if ON, check the wiring again by adjusting the polarity.
 - Connect IN+ and IN- of the supplied plug connector to own power source, respecting the polarity.
 - Connect LOAD+ and LOAD- of the supplied plug connector to own load, respecting the polarity.
 - Plug the IN+/-, LOAD+/- connector to the device.
 - Power-on the power source and verify that everything is working properly.
- 3) Connections:** the device is equipped with pluggable screw terminals. 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).
 In order to comply with UL certification, use appropriate copper cables of indicated cross section, designed for an operating temperatures 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 and ensure that all strands of a stranded wire enter the terminal connection (see Fig.5)
- 4) Battery protection:** protects the battery and its cables against dangerous over currents. 15A Mini car Blade Fuse factory supplied is the max. allowed value, it can be replaced with a lower value fuse for a better protection with small batteries (see Fig.6)
- 5) DC input connection:** connect IN+ terminal to (+) positive pole and IN- terminal to (-) negative pole of the own power source.
 The device is also suitable for photovoltaic or wind turbine applications (see Fig.7).
- 6) Output connection:** The device is suitable for SELV and PELV circuitry.
 Check Uout before connecting the 723110 to the load. With output voltage set to the max. value, the continuous current must not exceed the nominal current 10A max.
- 7) Protection:** the device is protected against
- **REVERSE battery connection:** a red LED indicates that battery is connected with reversed polarity.
 - **Protection diode:** it avoids the voltage and current supplied by the battery to circulate through the power supply output circuitry and prevents failures due to reverse polarity connection.
 - **Deep discharge battery protection circuit:** this circuit disconnects the battery when its voltage drops under DDV voltage, to avoid battery damage.

Technical Support: Tel. +49 7151 6053-0 Fax +49 7151 6053-277 E-Mail: info@luetze.de

Art.-Nr./ Part-No./ Réf./ N.º art.: Typ/ Type/ Type/ Tipo:
723110 CNUPS24

Fig.1 Connections	Fig.2 Dimensions	Fig.3 Distances																	
<p>Just for reference</p>	<p>(1) Red LED: Batt. Reverse polarity (2) Red LED: Battery Low (3) Green LED: Battery OK (4) Battery connection (5) Diagnostic Output dry contact NC Power Supply OK (6) Charging current jumper (7) Green LED: Power Supply OK (8) Yellow LED: Load OK (9) DC output (load) (10) DC input</p> <p>Input DC Line:</p> <ul style="list-style-type: none"> IN = + + Positive DC IN = - - Negative DC <p>Output:</p> <ul style="list-style-type: none"> LOAD = + + Positive Load LOAD = - - Negative Load BATT = + + Positive DC Battery BATT = - - Negative DC Battery Dry contact = NC Dry contact = NO Dry contact = COM 	<table border="1"> <thead> <tr> <th>Dimension</th> <th>mm (inc)</th> <th>Distance</th> <th>mm (inch)</th> </tr> </thead> <tbody> <tr> <td>W</td> <td>54.0 (2.16)</td> <td>A</td> <td>20 (0.8)</td> </tr> <tr> <td>D</td> <td>110.0 (4.33)</td> <td>B</td> <td>50 (2.0)</td> </tr> <tr> <td>H</td> <td>115.0 (4.52)</td> <td></td> <td></td> </tr> </tbody> </table>		Dimension	mm (inc)	Distance	mm (inch)	W	54.0 (2.16)	A	20 (0.8)	D	110.0 (4.33)	B	50 (2.0)	H	115.0 (4.52)		
Dimension	mm (inc)	Distance	mm (inch)																
W	54.0 (2.16)	A	20 (0.8)																
D	110.0 (4.33)	B	50 (2.0)																
H	115.0 (4.52)																		

8) GENERAL INFORMATION ON BATTERIES

Rated voltage: is the voltage that the battery can supply in condition of full charge and rated current. Battery voltage without load is always higher of rated voltage.
Capacity: given in Ah (Ampere / hour) measured at 25°C/ 77°F. (e.g. at 10Ah battery can supply 10A for 1 hour or 1A for 10 hours).
Charging current: is the current to be applied to charge the battery, usually indicated by the manufacturer. A charging current higher than specified can damage the battery or shorten its life, a too low charging current results in a too long charging time and uncompleted or partial charge, thus reduced Ah capacity.
 Charging current of sealed lead batteries would never exceed 20% of capacity of the battery. The battery limits by itself the charging current supplied by the battery charger, depending on its charge status. Only when the battery is completely discharged it's possible to apply the maximum charging current.
Note: when choosing the capacity of the battery, consider that real capacity indicated by manufacturers can vary compared with rated capacity depending quality and cost, capacity is always given for new battery at 25°C/77°F, but during battery life it's capacity decreases due to ageing, even if the battery is not used, so calculate battery capacity and duration considering the worst operating conditions.
Discharge voltage: the right charging voltage value is given by the manufacturer; generally the voltage/current source must be capable to supply a voltage 10-15% higher than rated voltage of the battery. If charging voltage is lower than +10% of battery rated voltage, charging time increases and produce an uncompleted charge and thus a reduced capacity. Charging voltages higher than +20% of rated voltage can damage the battery and shortens its life.
Charging time: varies according to charging current/voltage. Consider a minimum charging time of 3-4 hours after a battery discharge.
Discharged battery: a battery is considered discharged when its voltage, measured applying a 50% load, is lower than -10% of rated voltage, or when voltage measured with no load is lower than rated voltage.
Total discharge: when a battery gives a voltage between 0 - 60% of rated voltage, it's totally discharged. Total or deep discharge reduces battery life and must be avoided. Disconnect the battery from the load when voltage is lower than e.g. 18V/9V in at 24V/12V battery.
Operating temperature: for a long duration of the battery operating temperature must be kept within 10°C/+50°F...30°C/+ 86°F. Battery duration decreases outside this range. At low temperatures the battery might not supply rated Ah, because electrochemical reaction are less efficient.
Overload-short circuit battery protection: battery and its connecting cables must be protected with overcurrent protection devices (fuses, circuit breakers, etc.) able to cut-off dangerous currents.

8) Allgemeine Informationen zu Batterien

Nennspannung: ist die Spannung, die die Batterie bei voller Ladung und Nennstrom liefern kann. Die Batteriespannung ohne Last ist immer höher als die Nennspannung.
Kapazität: angegeben in Ah (Ampere / Stunde), gemessen bei 25°C/ 77°F. (z.B. bei 10Ah kann die Batterie 10A für 1 Stunde oder 1A für 10 Stunden liefern).
Ladestrom: ist der Strom, der zum Laden der Batterie verwendet werden muss und wird normalerweise vom Hersteller angegeben. Ein höherer Ladestrom als angegeben kann die Batterie beschädigen oder ihre Lebensdauer verkürzen, ein zu niedriger Ladestrom führt zu einer zu langen Ladezeit und zu einer unvollständigen oder teilweisen Ladung und damit zu einer verringerten Ah-Kapazität. Der Ladestrom von verschlossenen Bleibatterien sollte nie mehr als 20 % der Kapazität der Batterie betragen. Die Batterie begrenzt selbst den vom Ladegerät gelieferten Ladestrom in Abhängigkeit von ihrem Ladezustand. Nur wenn die Batterie vollständig entladen ist, kann der maximale Ladestrom verwendet werden.
Hinweis: Berücksichtigen Sie bei der Wahl der Batteriekapazität, dass die von den Herstellern angegebene tatsächliche Kapazität je nach Qualität und Preis von der Nennkapazität abweichen kann. Die Kapazität wird immer für eine neue Batterie bei 25°C/77°F angegeben, aber während der Lebensdauer der Batterie nimmt ihre Kapazität aufgrund der Alterung ab, auch wenn die Batterie nicht benutzt wird; berechnen Sie daher die Batteriekapazität und -dauer unter Berücksichtigung der schlechtesten Betriebsbedingungen.
Entladespannung: Der richtige Wert für die Ladespannung wird vom Hersteller angegeben; im Allgemeinen muss die Spannungs-/ Stromquelle in der Lage sein, eine Spannung zu liefern, die 10-15 % über der Nennspannung der Batterie liegt. Liegt die Ladespannung unter +10% der Batterie-Nennspannung, verlängert sich die Ladezeit und führt zu einer unvollständigen Ladung und damit zu einer geringeren Kapazität. Ladespannungen, die höher als +20% der Nennspannung sind, können die Batterie beschädigen und ihre Lebensdauer verkürzen.
Ladezeit: variiert je nach Ladestrom/Spannung. Rechnen Sie mit einer Mindestladezeit von 3-4 Stunden nach einer Batterieentladung.
Entladene Batterie: Eine Batterie gilt als entladen, wenn ihre Spannung, gemessen bei einer Last von 50 %, weniger als -10 % der Nennspannung beträgt, oder wenn die ohne Last gemessene Spannung niedriger als die Nennspannung ist.
Tiefentladung: Wenn eine Batterie eine Spannung zwischen 0 und 60% der Nennspannung aufweist, ist sie tiefentladen. Eine Tiefentladung verkürzt die Lebensdauer der Batterie und muss vermieden werden.
 Trennen Sie die Batterie von der Last, wenn die Spannung niedriger ist als z.B. 18V/9V bei einer 24V/12V Batterie.
Betriebstemperatur: Für eine lange Lebensdauer der Batterie muss die Betriebstemperatur zwischen 10°C/+50°F...30°C/+ 86°F gehalten werden. Außerhalb dieses Bereichs verkürzt sich die Lebensdauer der Batterie.
 Bei niedrigen Temperaturen liefert die Batterie möglicherweise nicht die Nenn-Ah, da die elektrochemische Reaktion weniger effizient ist.
 Schutz der Batterie vor Überlastung und Kurzschluss: Die Batterie und ihre Anschlusskabel müssen durch Überstromschutzvorrichtungen (Sicherungen, Schutzschalter usw.) geschützt werden, die gefährliche Ströme abschalten können.

Technical Support: Tel. +49 7151 6053-0 Fax +49 7151 6053-277 E-Mail: info@luetze.de

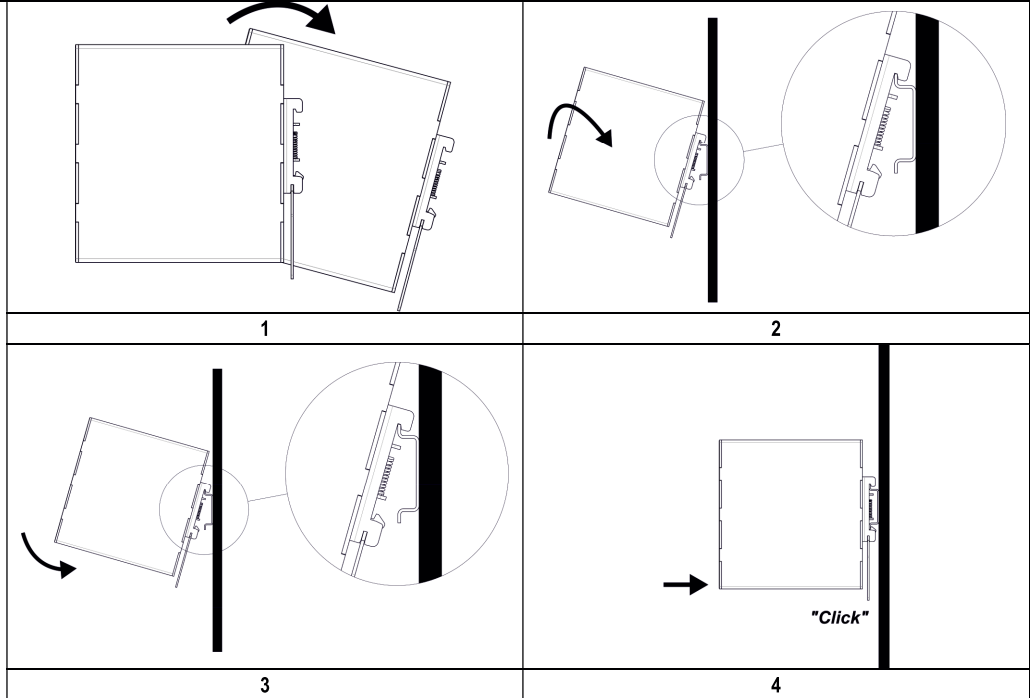
Art.-Nr./ Part-No./ Réf./ N.º art.: Typ/ Type/ Type/ Tipo:
723110 **CNUPS24**

Fig.4
Mounting / Dismounting Instructions

For DIN rail fastening according to IEC 60715 TH35-7.5(-15)
 Mounting as shown in figure, with input terminals on lower side, with suitable cooling and maintaining a proper distance between adjacent devices as specified in the I.S. manual of each family.

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

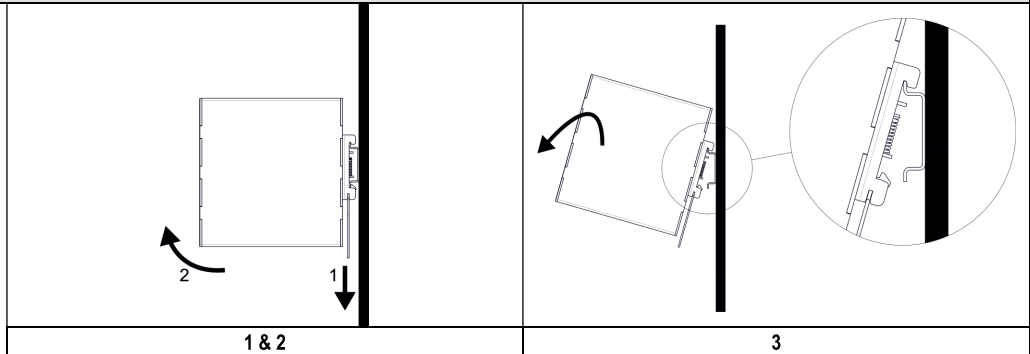


Fig.5
Recommended connecting cable

	<p>Recommended Tightening torque 0.5-0.6 Nm 4.42-5.30 lbf in</p>		<p>Solid: 2.5mm² / 12AWG Stranded: 1.5mm² / 12AWG L: 6.0-7.5mm / 0.24-0.30 in</p>
--	---	--	---

Fig.6
Input protection

Use Mini Car blade fuses 15A

Technical Support: Tel. +49 7151 6053-0 Fax +49 7151 6053-277 E-Mail: info@luetze.de

Art.-Nr./ Part-No./ Réf./ N.º art.: Typ/ Type/ Type/ Tipo:
723110 CNUPS24

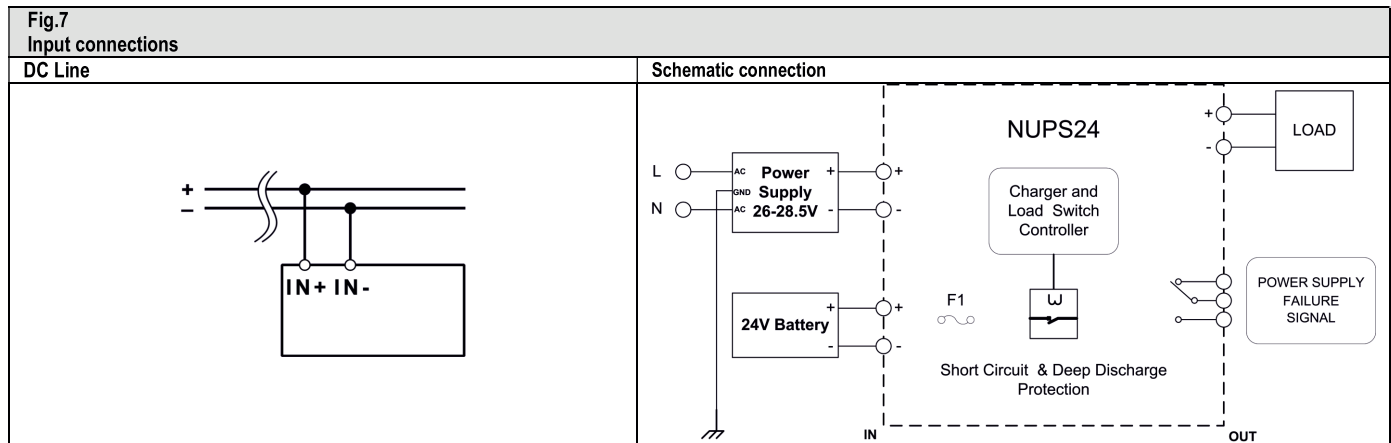


Fig.8
Environment

Operating temperature	Derating
-40°C...70°C 5...95% r.H. non condensing UL Certified up to 60°C	-0.25A/°C over 60°C

Note:

- Data may change without prior notice in order to improve the product.
- Please refer to the latest version of the "Instruction Manual" for each product by visiting www.luetze.com

See also the products below that can be used in conjunction with 723110: (accessory device)

- 722999 Type CPSRM50 50A Active ORing controller / redundancy management device
- 723115 Type CNBP30 Sealed Lead acid Battery pack

Technical Support: Tel. +49 7151 6053-0 Fax +49 7151 6053-277 E-Mail: info@luetze.de