

Short Form Installation User's Manual



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Models	PSH150 – 10kV Isolation Programmable DIN Rail Power Supply		
File No.:	I.M.PSH150	Rev.:	A02



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



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	AVVERTISSEMENT
<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>Radio interference!</p> <p>This is an electrical appliance according to EN55032, class A. It may cause radio interference in residential areas.</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>Interferenza radio!</p> <p>Questo apparecchio è un dispositivo di classe A secondo lo standard EN55032. Può causare interferenze radio nelle aree residenziali.</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> <p>Perturbations radioélectriques!</p> <p>Cet appareil est un dispositif de catégorie A selon le standard EN55032. Il peut causer des perturbations radioélectriques dans les zones résidentielles.</p>

Declaration of Conformity

	<p>NEXTYS SA. Via Luserne Sud 6, 6572 Quartino - Switzerland Phone: +41-(0)91 840 14 46 / 840 14 48; Fax: +41-(0)91 840 14 47 E-mail: info@nextys.com</p>
<p>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.</p>	
<p>ROHS compliance: the product respects the EC requirements related to ROHS substances, according to "Restriction of Hazardous Substances" as per document 2011/65/UE</p> <p>REACH compliance: the product respects the EC requirements related to REACH SVHC directive (2015)</p> <p>Note: all the reported information comes from our suppliers, NEXTYS SA. has not run any test to evaluate if the specific elements are present.</p>	
<p>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.</p>	
Code	Description
PSH150	10kV Isolation Programmable Power Supply IN 120...240Vac (110...400Vdc) / OUT 5...55Vdc – 12A Max (150W Max)

Certifications and approvals				
Reference standards	2014/35/EU (2014) 2014/30/EU (2014) EN61010-1 EN61010-2-201 UL508 EN60255-27 EN61000-6-2 - EN61000-4-2 - EN61000-4-3 - EN61000-4-4 - EN61000-4-5 - EN61000-4-11 EN61000-6-4 - EN55022 - EN55011 - EN61000-3-2	(Low Voltage Directive) (EMC directive) (Safety Standard) (Safety Standard) (Safety Standard) (Safety Standard) (Generic immunity standard for industrial environments) (Electrostatic discharge immunity test) (Radiated, radio-frequency, electromagnetic field immunity test) (Electrical fast transient/burst immunity test) (Surge immunity test) (Voltage dips, short interruptions and voltage immunity test) (Generic emission standard for industrial environments) (CISPR22 - EMC) (CISPR11 - EMC) (Limits for harmonics current emissions)		

System Description

PSH150 is an advanced DIN rail 1-phase input, 150W SMPS (Switched Mode Power Supply) with a distinctive feature: **10kV isolation between primary and secondary**. This allows it to be used in energy management, telecom, renewable energy and other demanding applications.

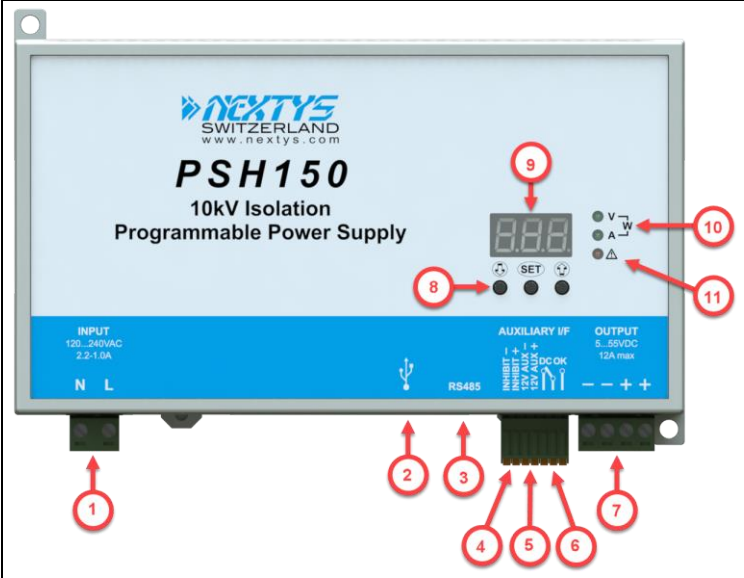
PSH150 includes a 1 phase SMPS module with PFC and class II wiring. A converter located on the secondary side allows the supply of a programmable voltage (5 to 55V), with user settable current limitation. The output is provided with an active ORing circuit that allows the parallel connection for redundancy of several units without the need of an external redundancy module.

An auxiliary power supply of 12V/100mA is available, an external INHIBIT signal can be applied for controlling the output status.

A multifunctional display shows the output parameters and 3 keys can be used for programming the unit. A dry contact (relay) is related to "DC-OK" status.

RS-485 and USB ports are available for remote monitoring and setup.

Connections and User interface



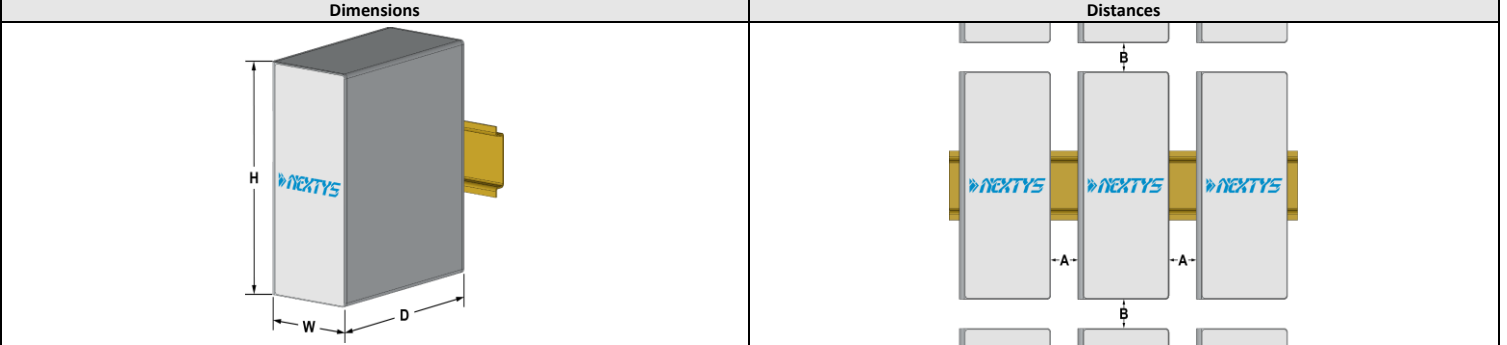
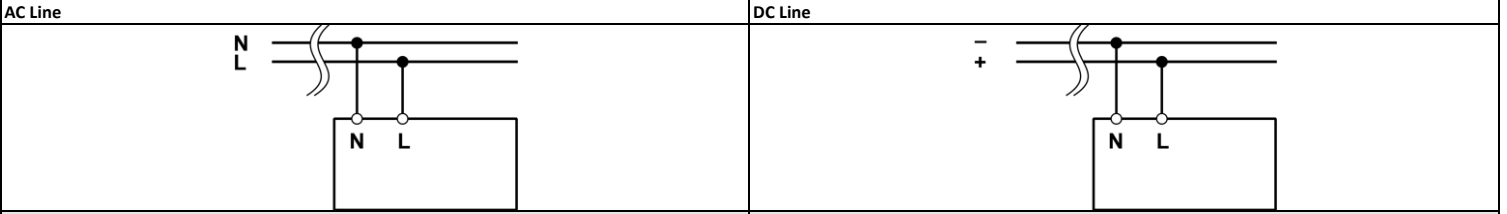
- AC input:** 2 poles are provided for input connection. This must be connected to the AC or DC line source. Voltage range is 90...277Vac or 110...400Vdc.
- Modbus over USB:** Used to connect a device running POWERMASTER or custom application. Firmware update is also possible.
- Modbus over RS-485:** Used to connect a device running POWERMASTER or custom application. Firmware update is also possible.
- INHIBIT input:** A voltage between 5Vdc and 30Vdc applied to this input activates the inhibit function.
- Auxiliary 12Vdc output:** This output provides a regulated 12Vdc output with 100mA maximum output current. This output is short circuit protected.
- DC-OK dry contact:** SPDT normally open and normally closed relay contacts are available; the relay closes when the output voltage is >90% of the programmed output voltage value.
- DC Output:** 4 poles are provided for output connection; it must be connected to the load. The output voltage is adjustable between 5...55Vdc.
- Control keys:** 3 push buttons are provided to navigate through menus and to select various functions.
- Display:** 3-digits LED display providing information about the device status.
- Units LEDs:** 2 green LEDs are used to indicate the actual measurement indicated on the display.
- Alarm LED:** blinking when there is an alarm; the relevant alarm code is indicated on the display.

Input Connection: Single phase: <ul style="list-style-type: none"> L = Line N = Neutral DC: <ul style="list-style-type: none"> L = + Positive DC N = - Negative DC 	Output Connection: <ul style="list-style-type: none"> + = Positive DC - = Negative DC 	Auxiliary Connections: INHIBIT: (5...30Vdc) <ul style="list-style-type: none"> + = Positive DC - = Negative DC 12V AUX: (12Vdc / 100mA) <ul style="list-style-type: none"> 12V+ = Positive DC 12V- = Negative DC DC OK: (SPDT, 24Vdc / 1A) <ul style="list-style-type: none"> NO NC COM 	RS-485 <ul style="list-style-type: none"> PIN4 = TX/RX D1 PIN5 = TX/RX D0 PIN8 = GND 	USB-B Type <ul style="list-style-type: none"> 1 = VBUS (+5V) 2 = Data (D-) 3 = Data (D+) 4 = GND
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Recommended connecting cable

	Recommended Tightening torque Input / output connections 0.5-0.6Nm 4.42-5.30 lbf in Auxiliary connections Insertion force per pole Max 3N or 0.674 lbf Withdrawal force per pole Min 1.5N or 0.337 lbf		Input / output connections Solid: 2.5mm ² / 12AWG Stranded: 2.5mm ² / 12AWG L: 6.0-7.5mm / 0.24-0.30in Auxiliary connections Solid: 0.5mm ² / 20AWG Stranded: 0.5mm ² / 20AWG L: 7.0-8.0mm / 0.27-0.315in
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Input connection



Dimension W H D	mm 179.5 100.3 64.5	Distance A B	mm 20 50
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Parallel connection

Multiple PSH150 can be connected with the output in parallel for power increase and / or redundancy.

In this mode of operation, the field "operating mode" (OP) shall be set to "Parallel" (PA).

The unit integrates an internal ORing circuit allowing paralleling several units for redundancy.

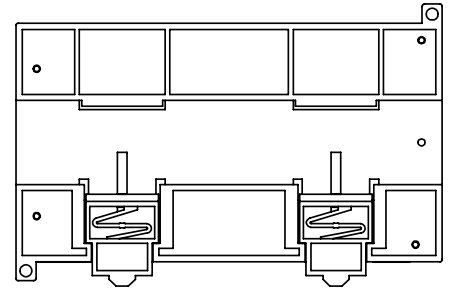
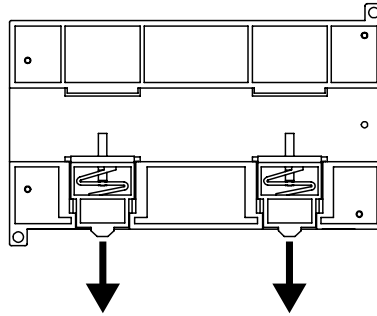
For proper operation the cable length connecting the PSH150 outputs to the load must have the same length and cross-section. For optimal current sharing it may be necessary to slightly adjust one of the two devices output voltage until the same current is delivered by the two units. It is recommended to limit the load power to 80% of the sum of the individual output power of the paralleled units.

Mounting / Dismounting Instructions

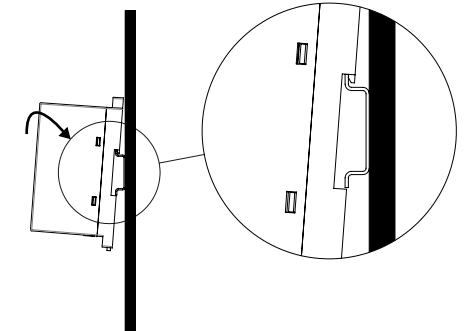
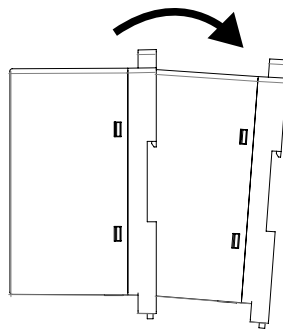
For DIN rail mounting according to IEC 60715 TH35-7.5(-15). Mounting as shown in figure, with input terminals on lower side, with suitable cooling and maintaining a proper distance between adjacent devices as specified in the User manual.

Mounting

1. Pull down to release and unlock the slide clamps
2. Tilt the unit slightly backwards.
3. Fit the unit over the top edge of the rail.
4. Slide it downward until it hits the stop.
5. Press toward top the two slide clamps for locking

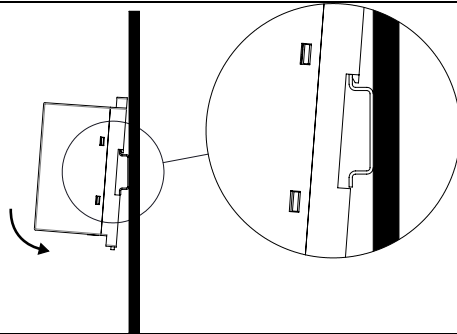


1

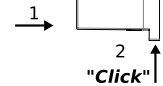


2

3

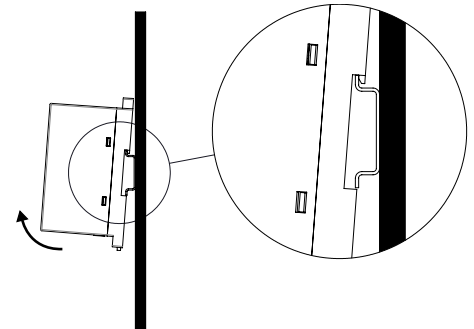
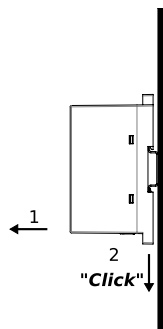


4 & 5

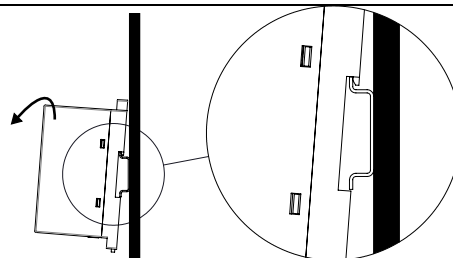


Dismounting

1. Pull down to release and unlock the slide clamps
2. Tilt the unit upward.
3. Unhook the unit from the rail.

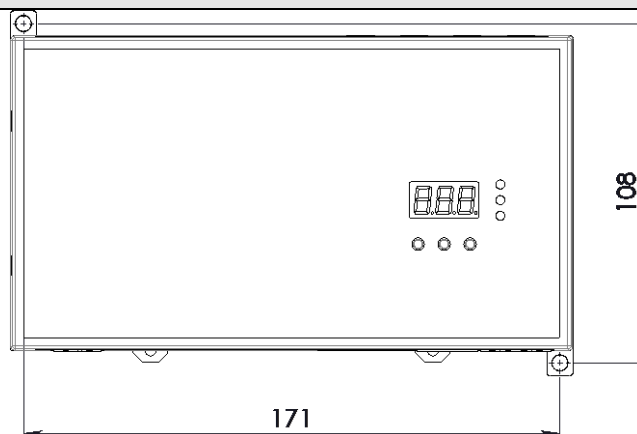


1 & 2



3

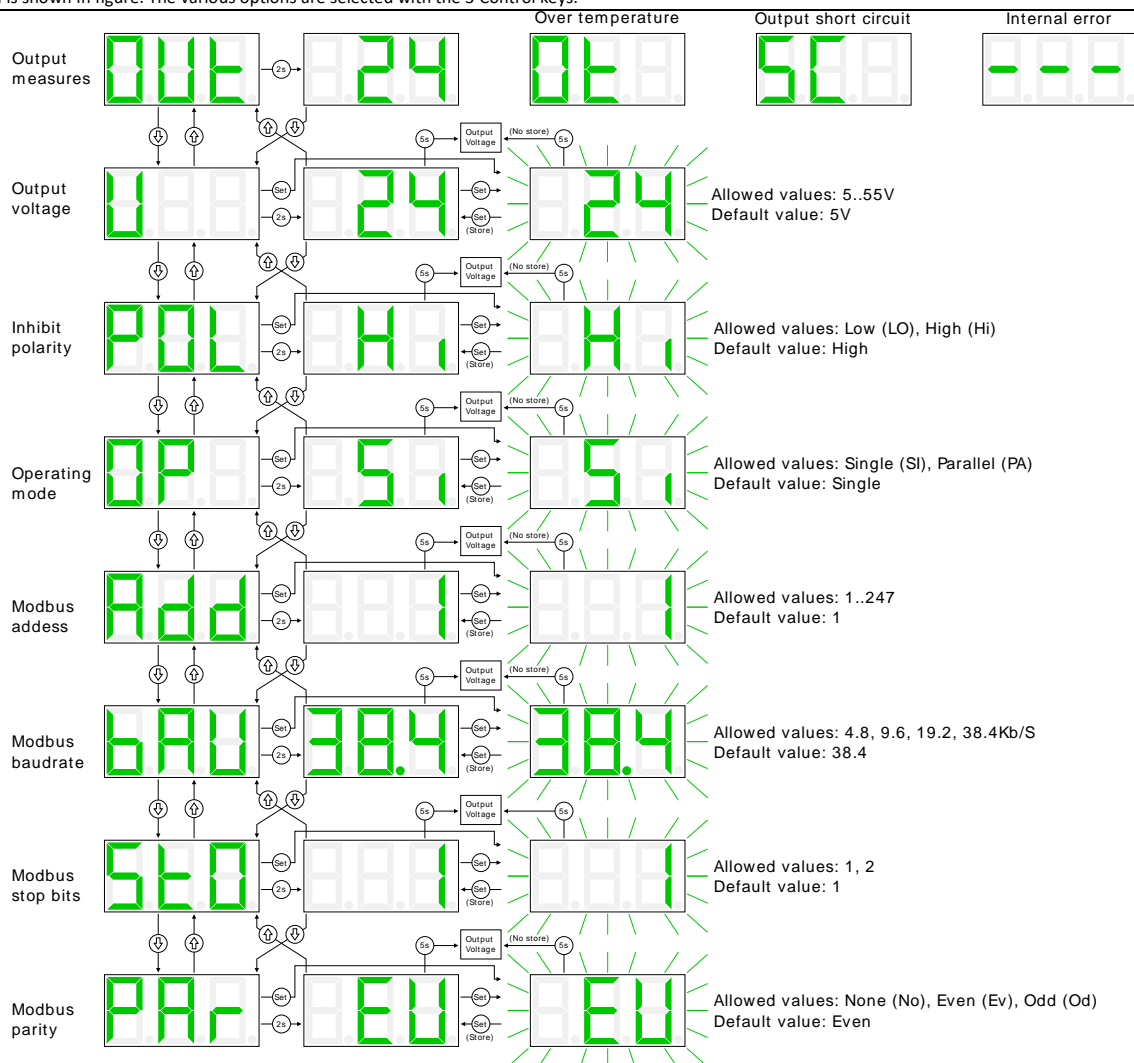
Wall / Panel mounting



It is possible to install directly on panel or wall using the appropriate fixing points according to the above image.

Menu navigation

The layout of the menu is shown in figure. The various options are selected with the 3 Control keys.



Alarm codes

Display code	Description	Behaviour
<p> <input type="radio"/> V_w <input type="radio"/> A <input checked="" type="radio"/> Δ </p>	Over-temperature protection The red LED blinks	The output is switched off until the internal temperature decreases to safe values
<p> <input type="radio"/> V_w <input type="radio"/> A <input checked="" type="radio"/> Δ </p>	Short circuit protection The red LED blinks	The output current is limited at the programmed value for 5 seconds, then the product switches off for 10 seconds. The cycle is repeated until the short circuit is removed
<p> <input type="radio"/> V_w <input type="radio"/> A <input checked="" type="radio"/> Δ </p>	Internal error, non recoverable The red LED blinks	The output is switched off. This error is caused by an unrecoverable internal fault
<p> <input type="radio"/> V_w <input type="radio"/> A <input type="radio"/> Δ </p>	USB power, no mains available	The product is powered through USB and the input mains is not present. The user can navigate through the menus. It can be used for firmware upgrade without the need of the input mains.