

Short Form Installation User's Manual



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Models CKMC5 – PWM controller and Soft start for DC Loads

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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 remplaçable, 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>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/UE

REACH compliance: the product respects the EC requirements related to REACH SVHC directive (EC) 1907/2006

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 CKMC5 **Description** Super Slim PWM controller and Soft-Start for DC load

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)
EN61000-6-4 (Generic emission standard for industrial environments)

Date: 28.11.2018

Place: Quartino, Switzerland

The product manager

Marius Ciorica

INSTRUCTIONS

1) Description: DIN rail Soft-start for DC Loads, that includes Power level and Soft-start duration adjustable with 2 user settable potentiometer.

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).

3) Connections: the device is equipped with spring terminals. To avoid sparks, do not connect or disconnect the connectors before having previously turned-off input power and waited capacitors discharge.

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 on Fig.5 and ensure that all strands of a stranded wire enter the terminal connection.

4) Input/Output connection: The device is suitable for SELV and PELV circuitry.

Check Uout before connecting the power supply to the load.

5) Operating: Connect the CKMC5 as indicated in Fig.1.

The CKMC module can be used for:

- ⌋ allowing to operate high inrush current loads in conjunction with power supplies that have low overload capability or hiccup type of current limitation.
- ⌋ DC loads where a power regulation is necessary, for example in motors and lamps. Remote power regulation is possible by use of an external potentiometer.

The used technique is PWM (Pulse Width Modulation).

It is equipped with a Soft-start circuit in order to avoid the known current peaks problems on inductive, capacitive or high dynamic loads as motors, lamps, coils and power supplies.

The Power regulation and the Soft-start duration are adjustable through two internal potentiometers (see Fig.7)

When an external potentiometer (see Fig.1 - 5kOhm) is used for remote Power regulation this mode is settable through an internal switch (see Fig.7).

6) Warning:

Before powering the unit check as follows:

- ⌋ Input and output polarity
- ⌋ Input voltage, $U_{IN} \text{ max} = 28\text{VDC}$ (or 15VDC)
- ⌋ Output voltage, $U_{OUT} \text{ max} = 36\text{VDC}$
- ⌋ Max. load current, $I_{OUT} \text{ Max} = 4\text{A}$

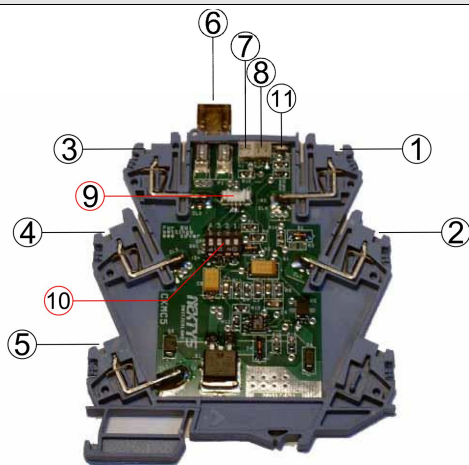
5) Warranty: The device is guaranteed free from factory defects for the time specified in the "Sales Conditions"

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.

Fig.1
Connections



- (1) CL4/A2 (-) Negative DC input side
- (2) CL5/A1 (+) Positive DC input side
- (3) CL3 (-/GND) Common negative DC supply/load output side
- (4) CL2/13 (+/VCC) Positive DC supply output side
- (5) CL2/14 (+/Load) Positive DC load output side
- (6) ATO fuse
- (7) (R7) Soft-start duration adjustment
- (8) (R5) Power regulation adjustment
- (9) Connector for external Soft-start potentiometer
- (10) (SW1) soft-start setting
- (11) Green LED: input OK

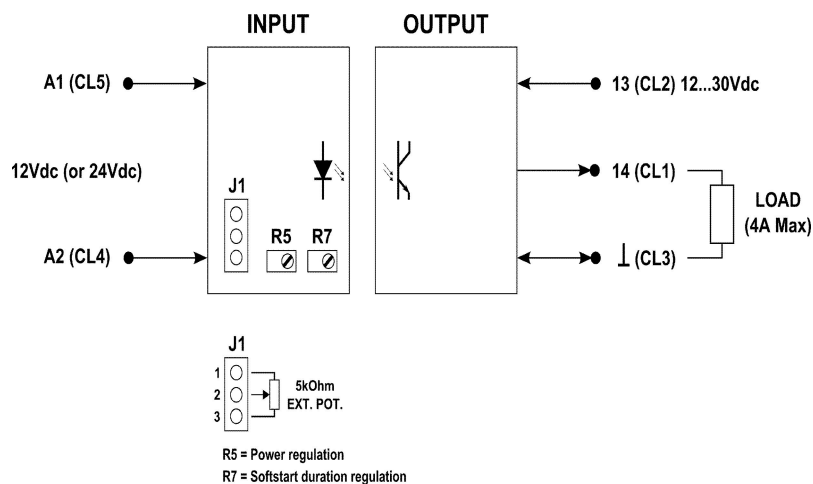


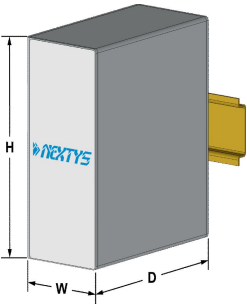
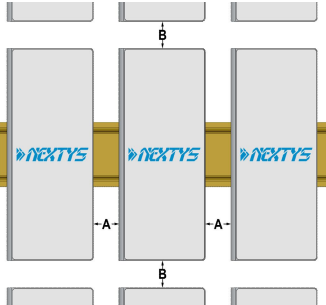
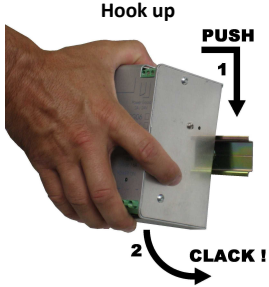
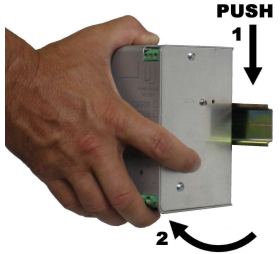
Fig.2 Dimension		Fig.3 Distances		Fig.4 Mounting/Dismounting	
					
Dimension	mm	Distance	mm		
W	7.7	A	5		
D	112	B	20		
H	90				


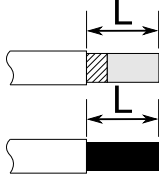






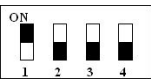
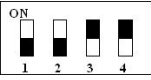
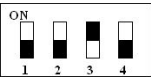

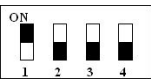
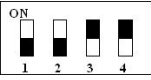
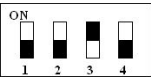

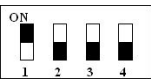
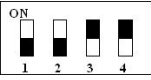
Fig.5 Recommended connecting cable			Fig.6 Output protection		
	5 Spring clamps		Solid: 2.5mm ² / 26 - 14AWG Stranded: 2.5mm ² / 26 - 14AWG L: 5.5 – 6.5mm / 0.22 - 0.26 in	Mini blade fuse 7.5AF User replaceable	

Fig.7 Soft-start setting and regulation													
Power regulation 100%  0%  R5  R7  Soft-start duration regulation Max  min													
Power regulation is always active, with Soft-start ON or Soft-start OFF. Soft-start duration regulation is active with Soft-start ON.													
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