YACHTICA®

Automated Living on Board.

DIM 22PN

2 CHANNEL MARINE DIMMER MODULE 12/24 VDC

This installation manual has been written by the manufacturer and it is considered integrating part of this product.

The information included are intended for the expert technicians who execute the installation and the extraordinary maintenance of the product.

The expert technicians must have specific competences and particular abilities in order to carry out correctly and safely their work.

The constant observance of the information included in this manual guarantees safety of men, energy serving and a longer duration of product operative-life.

In order to avoid wrong handling and the consequent risk of accidents, it is important to read this manual carefully, keeping scrupulosly to guidelines according to the supplied information.

CONFORMITY DECLARATION

All the devices of the YACHTICA® system are designed in order to comply with the requirements of the European EMC directive 89/336 and with the Low Voltage Directive 93/68.

All the devices of the YACHTICA® system are tested and found to comply with the specification of the CE marking.

CE

CONTENTS

DESCRIPTION

The DIM 22PN module is equipped with an integrated microcontroller used to control and to dimm 2 different 12/24V$_{DC}$ lighting sources, provided with 2 power outputs.

The module is rated to work with voltage driven monochromatic LEDs (with or without driver added). It can also be used to control 12/24V$_{DC}$ incandescent and halogen lamps. Each channel handles up to 6A.

The module has 2 dry contact inputs that can be used with push-buttons or sensors, allowing to control single outputs or recall four global scenarios.

FEATURES

2 Dimmer outputs 12/24V$_{DC}$

Each channel allows a PWM (400Hz or 150Hz selectable) 12/24V$_{DC}$ constant voltage dimming for passive (LED strip), active (spot with electronic on board) or spot with voltage (12/24V$_{DC}$) to current (ex. 350-500-700mA, etc.) dimmable driver lighting sources. It can also be used to control 12/24V$_{DC}$ constant voltage halogen light circuits.

2 dry contact inputs

The module allows single output control using the dry contact inputs where push-buttons or sensors can be connected.

Stand-alone mode

The module has a standard programming that allows to manage outputs, connecting push-buttons or sensors to the dry contact inputs.

Short circuit and overload advanced protection

Each single output is protected by an automatic monitoring system that is able to recognize a short circuit, disabling and protecting the module.

NOTE: Il modulo non protegge il carico collegato alle uscite; si suggerisce di proteggere i carichi in maniera opportuna, secondo le esigenze.

DIN rail installation

The DIM 22PN module can be installed into an electrical switchboard using DIN rail.

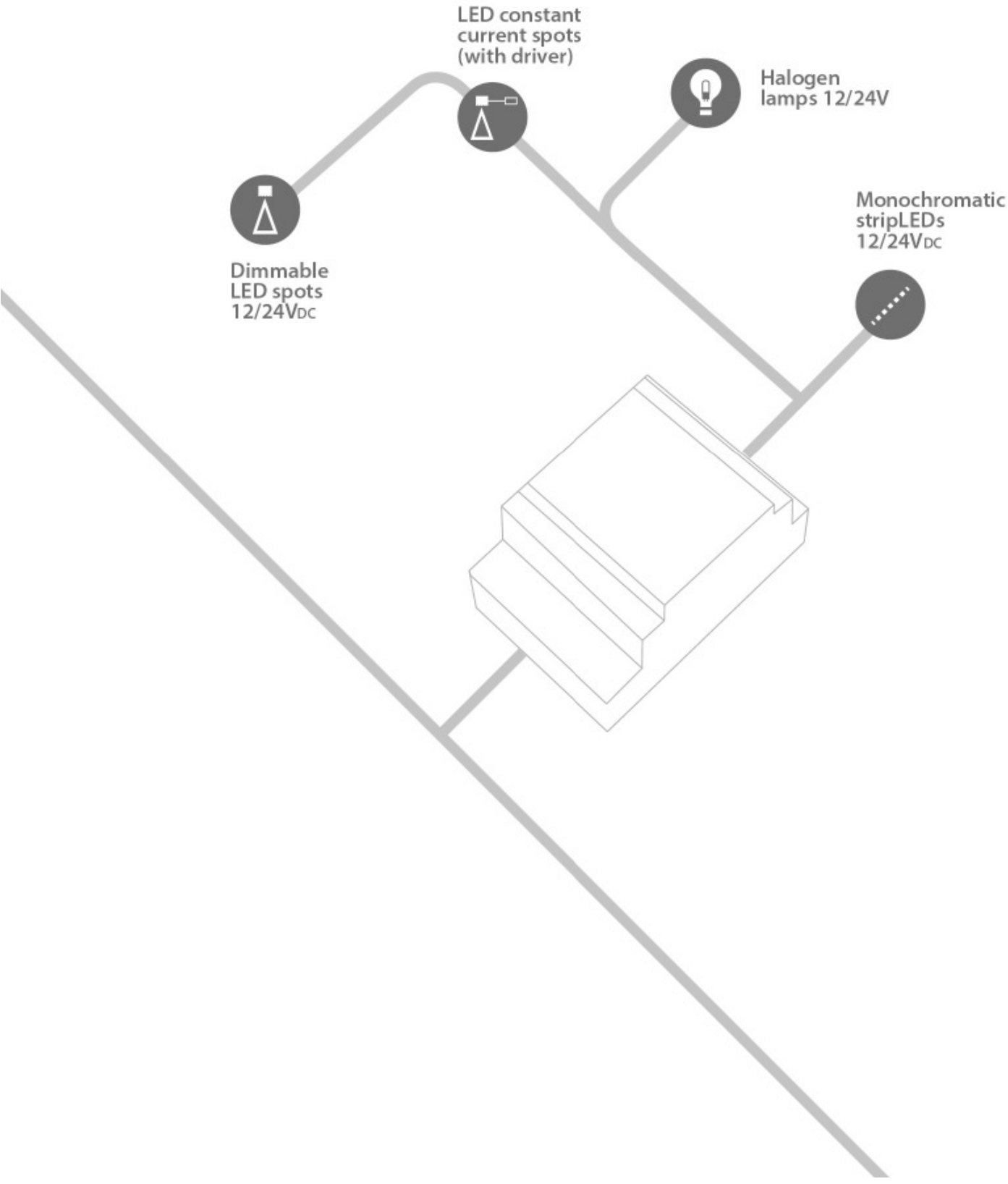
Detachable terminal block

All the terminal block of YACHTICA® modules are detachable, allowing a simple wiring and a quick replacement without the needed to disconnect any cable, with a high level of security and stability of the system.

Tropicalized electronic

All the YACHTICA® modules have a tropicalization treatment in order to prevent a deterioration due to the humidity and sea mist.

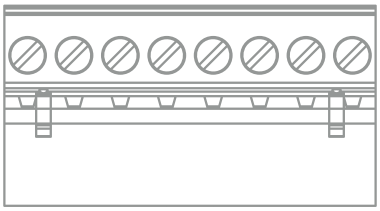
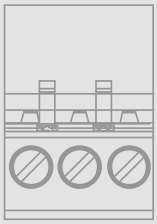
APPLICATIONS



TECHNICAL SPECIFICATIONS

SPECIFICATION	DETAILS
Electronic power supply	11-28V_{DC}
Electronic requirements	1,2W (50mA @24V_{DC}, 100mA @12V_{DC})
Outputs power supply	12/24V_{DC}
Outputs	2
Dry contact inputs	2
Load ratings	- 6A@24V (144W) per channel, PWM 400Hz o 150Hz - 6A@12V (72W) per channel, PWM 400Hz o 150Hz
Working temperature	+5°/+50° C (41°/122° F)
Storage temperature	-40°/+70° C (-40°/+158° F)
Humidity	15%/90% non condensing
Heat dissipation (@Ta=40°C, maximum load)	3W
IP Protection	IP20
Enclosure	Noryl
Color	RAL 7053
Dimensions (LxAxP)	53x58x90 mm (3 DIN module spaces)
Weight	100 g

MODULE DESCRIPTION

#	CONNECTORS, LED, INDICATORS	DESCRIPTION
1		**8 poles detachable connector;** **Maximum cable section: 2,5mm² (12AWG);** Outputs and module power supply connector; **+:** positive input 12-24VDC; **C:** negative input 12-24VDC; **+:** output 1 positive 12-24VDC; **-:** output 1 negative 12-24VDC; **1:** output 1 negative/PWM **+:** output 2 positive 12-24VDC; **-:** output 2 negative 12-24VDC; **2:** output 2 negative/PWM;
2		**3 poles detachable connector;;** **Maximum cable section: 1,5mm² (15AWG);** 2 dry contact inputs connector; **1-2:** inputs; **C:** common.
3		**DIP switch functionality** Activating a DIP allows the module to change some of its features according to load type connected. **DIP 1**: if ON the module runs programming 2 (see pag. 17 for details). It is necessary to restart the module. **DIP 2**: if ON allows to syncronize output 1 and 2 to a 3 wire driver load connected to the outputs. **DIP 3**: if ON output 1 and 2 are linked: the control of both outputs is with input 1 and they will act exactly the same. In this way it is possible to connect to the module an up to 12A load. **DIP 4**: if ON PWM output frequencyis set to 150Hz. It is useful for noisy spot driver. It is necessary to restart the module.
4		**orange LED, OUTPUT STATUS.** *LED 1*: on when output 1 is switched on. *LED 2*: on when output 2 is switched on. **NOTA: i DIP 1 e 2 servono a sincronizzare lo stato delle due uscite con lo stato relativo dei led di stato**
5		**green LED, INPUT STATUS.** *LED 1*: on when input 1 is activated. *LED 2*: on when input 2 is activated.

INSTALLATION

Important notes

The following information are intended for the expert technicians who execute the installation and the extraordinary maintenance of the product. The installation and the maintenance of the module must be executed by qualified technicians, respecting the Norm of the installation country.

The expert technicians must have specific competences and particular abilities in order to carry out correctly and safely their work.

The constant observance of the information included in this manual guarantees safety of men, energy serving and a longer duration of product operative-life. Keep this manual and notes included.

In order to avoid wrong handling and the consequent risk of accidents, it is important to read this manual carefully, keeping scrupulosly to guidelines according to the supplied information.

Electrical tension may cause shock and severe burns. Be sure to turn off the electrical supply before carrying out any type of work on the connectors. Omission of observation of these safety measures may cause death or severe lesions to people as well as great material damages.

Before preceeding with the use of the modules, make sure that electric installation, carried out by a qualified technician in conformity with the Technical Norms, corresponding to the class of homologation of the electrical system, is provided with the devices prescribed for the protection against direct and indiriect contacts and electrical surcharges.

The modules of the YACHTICA® must be exclusively used in connection with other modules and external components which are conformed to the Norms comparative to the product.

Do not use the module if, upon visual inspection, it shows deterioration of the enclosing box or if the screening wraps of the feeding cables show any wear and tear or damage.

The YACHTICA® system may not be used to carry out safety and accident prevention functions since it does not have the redundancy requirements lawfully requested.

The installer must verify the correct installation and operation of the product.
It is prohibited to use the product for improper purposes or purposes different from those provided

V.Y.C. Srl shall not be held liable for any damage of any sort or kind in case of module used or installed incorrectly.

It is prohibited to tamper or to modify the product.

Before starting

Place the module inside a switchboard and follow carefully the following wiring diagrams. The module can be installed on DIN rail.
Always switch off the electronic and outputs power supply before carrying out any type of electrical connection on the module.

NOTE: use a dedicated stabilized power supply for electronic modules installed into a switchboard.

The module is intended for internal use. Install it in dry place in order to respect the specifications described in the TECHNICAL SPECIFICATIONS paragraph of this manual.

Blackout management

The YACHTICA® modules manage the states of lack of power supply both for the electronic and the power in case of dimming modules.

Lack of electronic power supply (all modules).
In case of lack of this tension the module switch off. After the blackout the outputs come back to their latest values before the blackout.

Lack of power supply for outputs (dimmer modules).
In case of lack of power supply for the outputs, the dimmer modules show this with a blinking of FUSE PROTECTION LED and the lighting icons on the display will disappear. After the blackout, if no problem occurs, the outputs come back to their latest values.

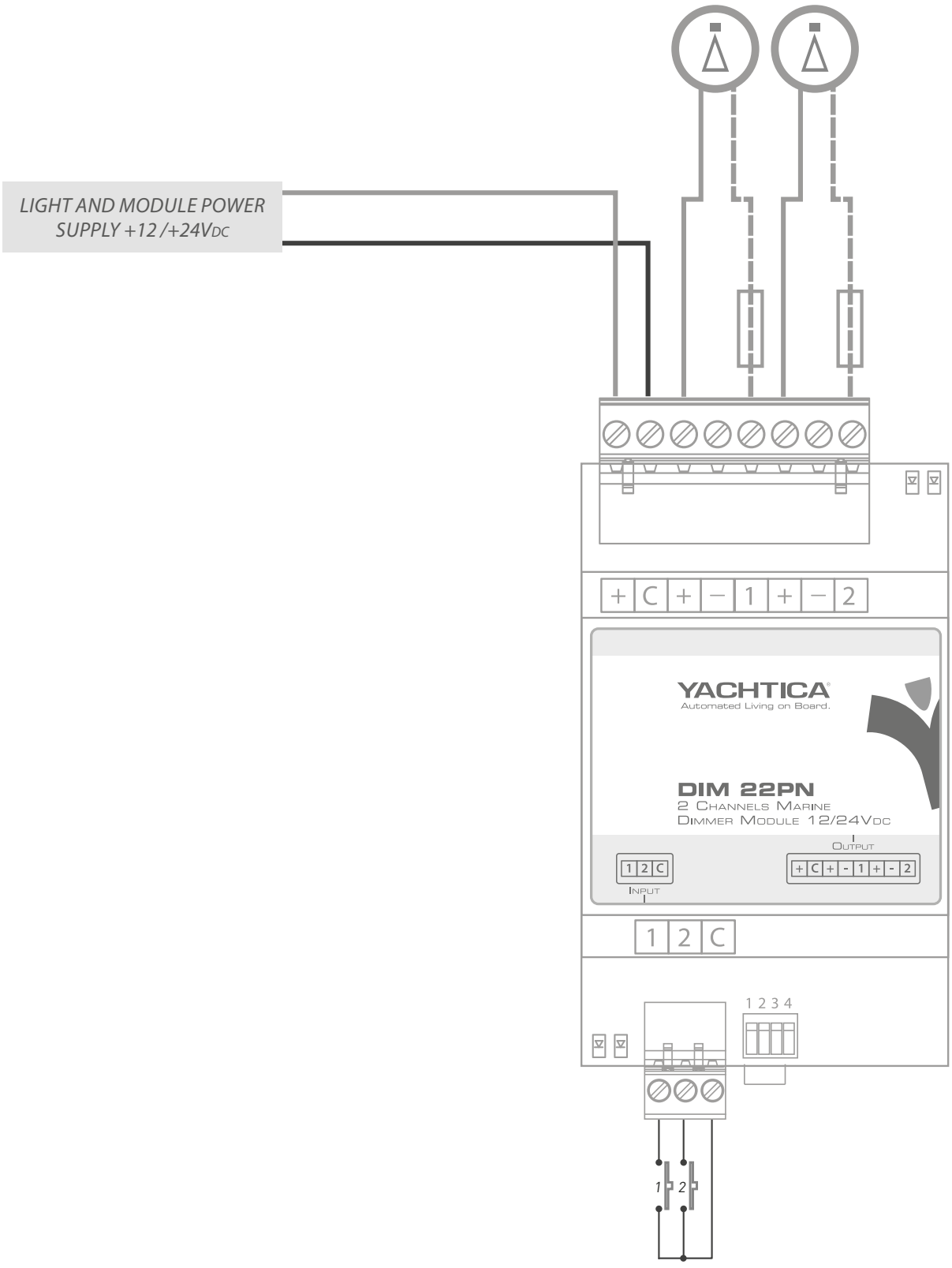
WIRING DIAGRAMS

Shown below different wiring diagrams that can be used when installing a DIM 24PN(-F) module.

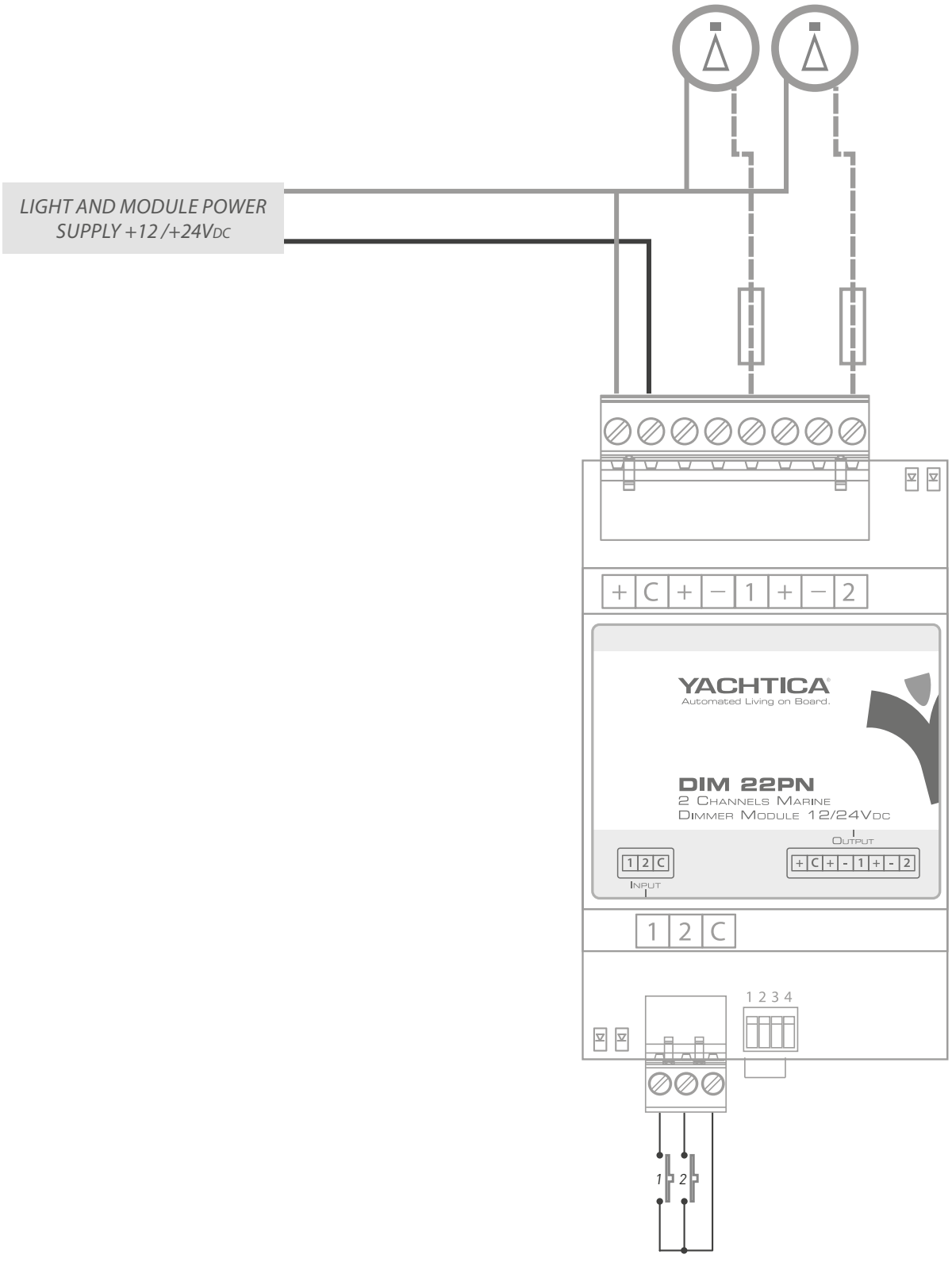
For particoular wiring ask for YACHTICA® assistance.

NOTE: it is suggested to protect each output properly (fuse), according to the wiring present on board. Choose proper size of protections according to the section of the cables used and according to the load connected.

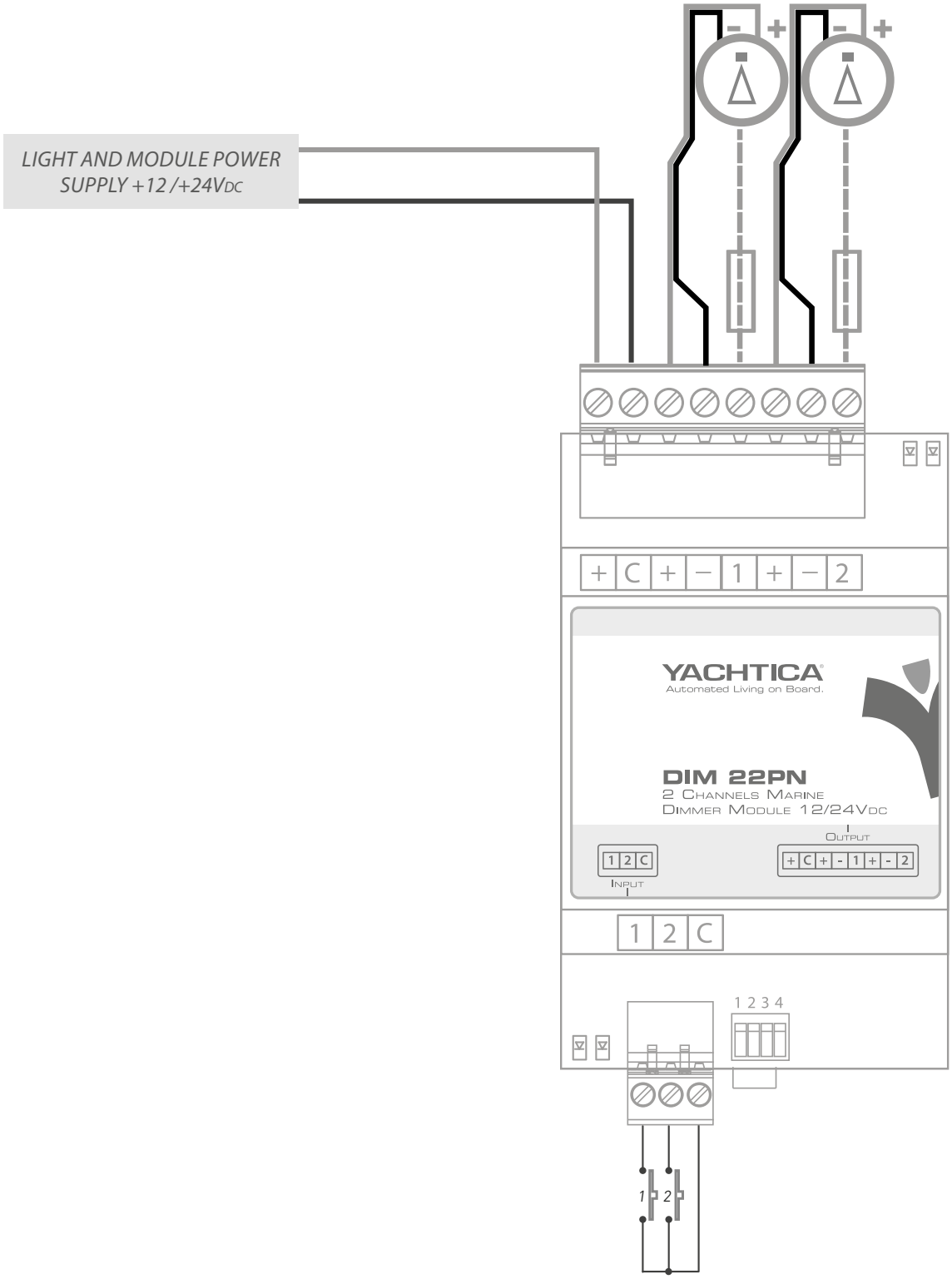
SCHEME 1: Direct wiring on the module



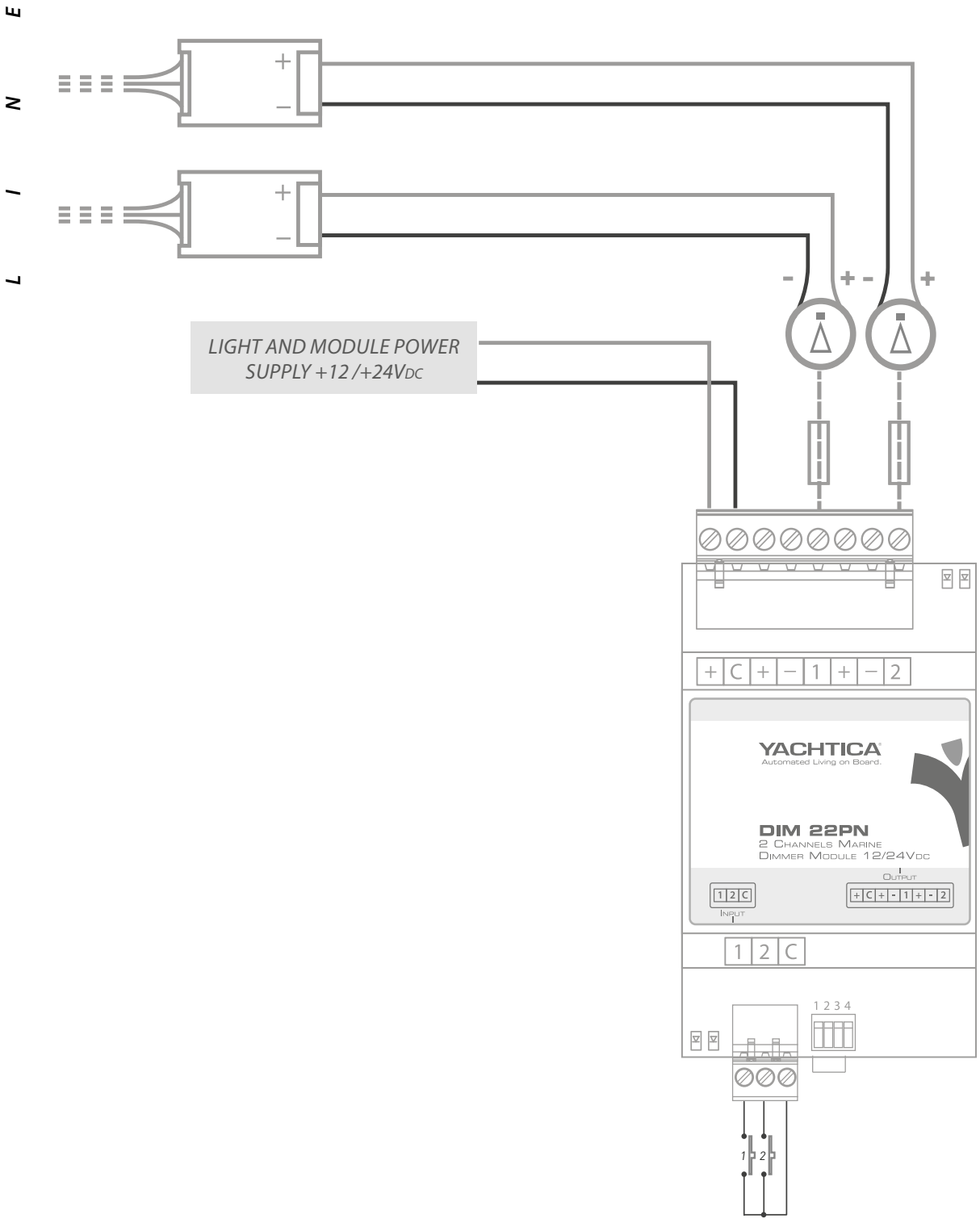
SCHEME 2: Wiring with direct positive



SCHEME 3: Wiring for 3 wires spots



SCHEMA 4: Wiring with direct positive and independent power supply



PROGRAMMING

Using the 2 dry contact inputs it is possible to manage the outputs according to the selected programming explained below.

PROGRAMMING 1

If DIP switch number 1 is off the module runs programming 1.

# IN	FUNCTION NAME	DESCRIPTION
1-2	**Dimmer with memory**	2 Outputs control commands: **Short press:** switch on and off corresponding output to its last value, in 3 seconds. **Long press:** allows the dimming of the corresponding output. When reaching 100% and 0%, the dimming process stops for 2 seconds, in order to select these particular values. When releasing the button the output stops to the reached value.

PROGRAMMING 2

If DIP switch number 1 is on the module runs programming 2

# IN	FUNCTION NAME	DESCRIPTION
1-2	**Programming 2**	2 Outputs control commands: **Output off** **Short press:** switches the output on to the last value reached while dimming, in 3 seconds. **Long press:** night mode activated (output to 1%) **Double Click:** switches on the light to 100% **Output on** **Short press:** switches the output off **Long press:** start dimming. Each time the user releases the button and then has a long press again the dimming direction changes.

PROBLEM SOLVING

PROBLEM	POSSIBILE CAUSE	POSSIBILE SOLUTION
Module does not switch on	The module doesn't receive power supply on the electronic power supply connector	Check that dedicated power supply is working properly, providing right output voltage according to the specifications written in this manual.
	Positive and negative cabling poles inverted	Check that dedicated power supply positive and negative poles are connected in the right way.
he module is switched on but the outputs connected don't switch on	The module doesn't receive output power supply	Check that 12/24V$_{DC}$ dedicated output power supply is working properly, providing right output voltage.
	One or more outputs are in short circuit	Check the cabling for the outputs.
	One or more outputs are in overload	Check that the load connected to each output of the module is under 6A. Check also that the switchboard temperature in which the module is installed is not too high: hot places can reduce the maximum load of the outputs.
Nothing happens while pressing a button connected to an input of the module	Broken cable problem	Check if the green LED on the module switches on while pressing the corresponding input. If it does not happen check the cabling.

REPAIR AND WARRANTY POLICIES

Merchandise returns

No V.Y.C. Srl merchandise may be returned for credit, exchange or service without prior authorization from V.Y.C. Srl. To obtain warranty service for V.Y.C. Srl products, contact V.Y.C. Srl or an authorized dealer. Request for an RMA (Return Merchandise Authorization) and fill it in properly all the fields, before returning the module. Shipments arriving freight collect or without RMA number shall be subject to refusal.

Return freight charges following repair of items under warranty shall be paid by V.Y.C. Srl, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser. V.Y.C. Srl will provide repairing costs in case the merchandise is not under warranty.

V.Y.C. Srl limited warranty

V.Y.C. Srl warrants YACHTICA® products to be free from manufacturing defects in materials and workmanship under normal use for a period of 2 years from the date of purchase.
This warranty extends to products purchased directly from V.Y.C. Srl or an authorized YACHTICA® dealer.

V.Y.C. Srl shall not be liable to honor the terms of warranty if the product has been used in any application other than that for which it was intended or if it has been subject to misuse, accidental damage, modification or improper installation procedures
Furthermore, this warranty does not cover any products that has had the warranty void label altered, defaced or removed.

V.Y.C. Srl shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, V.Y.C. Srl makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty.

This warranty statement supersedes all previous warranties.

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