User Manual

WhisperPower Center

CAN to CAN interface

Multiprotocol communication module | optional for WP-Suntrack PRO as interface to WhisperConnect

whisperpower.com

CONTENTS

1	**INTRODUCTION**	**5**
1.1	WHISPERPOWER CENTER CAN TO CAN INTERFACE	5
1.2	LEGAL NOTICE	5
1.3	CONVENTIONS	5
1.3.1	SYMBOLS	5
1.4	WARRANTY AND LIABILITY	5
1.4.1	EXCLUSION OF WARRANTY	5
1.4.2	DISCLAIMER OF LIABILITY	5
1.4.3	COMPATIBILITY	5
1.5	SAFETY PRECAUTIONS	6
1.5.1	GENERALITIES	6
1.5.2	WARNINGS	6
1.6	PRODUCT RECYCLING	6
2	**EU DECLARATION OF CONFORMITY**	**6**
2.1	CONTACT INFORMATION	6
3	**MATERIAL NEEDED FOR THE INSTALLATION**	**7**
3.1	CONTENTS OF THE WPC-CAN COMMUNICATION SET	7
4	**OTHER REQUIRED MATERIAL**	**8**
5	**INSTALLATION OF THE WPC-CAN**	**8**
5.1	CAN BUS SPEED	9
5.2	WIRING WPC-CAN	9
5.3	MOUNTING	10
5.4	CONNECTION OF THE COMMUNICATION BUS (WPC-BUS SIDE)	10
5.5	CONNECTION OF THE COMMUNICATION BUS (WHISPERCONNECT)	11
5.6	BLINKING CODES AND PUSH BUTTON	12
5.6.1	SIGNALIZATION LEDS	12
5.6.2	ELEMENTS ON THE EXTERNAL CAN BUS SIDE OF THE MODULE	13
6	**TROUBLESHOOTING**	**13**
7	**SOFTWARE UPDATES**	**14**
7.1	UPDATING PROCESS	14
8	**DIMENSIONS**	**14**

1 INTRODUCTION

1.1 WHISPERPOWER CENTER CAN TO CAN INTERFACE

This manual contains a complete description of the functioning of the WhisperPower Center CAN to CAN Interface. The WhisperPower Center CAN to CAN Interface makes it possible to access systems with WhisperPower devices through multiple protocols.

1.2 LEGAL NOTICE

The use of WhisperPower devices is the responsibility of the customer in all cases. WhisperPower reserves the right to make any modification to the product without prior notice.

1.3 CONVENTIONS

1.3.1 Symbols

	This symbol indicates a risk of material damage.
	This symbol indicates a procedure or function that is important for a safe and correct use of the equipment. Failure to respect these instructions may lead to the cancellation of the guarantee or to a non-compliant installation.

1.4 WARRANTY AND LIABILITY

During production and assembly, each WPC-CAN undergoes several controls and tests. These are carried out in full respect of fixed procedures. Each WPC-CAN is given a serial number allowing a perfect follow-up of the controls, in conformity with the specific data of every device. For this reason, it is very important to never remove the descriptive sticker with the serial number. The production, assembly and tests of each WPC-CAN are entirely carried out in our factory in Drachten (NL). The warranty of this product depends on the strict following of the instructions in this manual. The warranty period for the WPC-CAN is 5 years as from its production date.

1.4.1 Exclusion of warranty

- No warranty will be applied for damages caused by handling, operation or actions that are not described in this manual. Damages arisen from the following events are not covered by the warranty:
- Overvoltage on the device.
- Liquid in the device or oxidation due to condensation.
- Failures due to a fall or to a mechanical shock.
- Modifications made without the explicit authorization of WhisperPower.
- Nuts or screws partially or insufficiently tightened during installation or maintenance.
- Damages due to atmospheric overvoltage (lightning).
- Damages due to transport or improper packaging.
- Disappearance of original marking items.

1.4.2 Disclaimer of liability

Installation, commissioning, use and maintenance of this device cannot be supervised by the company WhisperPower. For this reason, we do not accept any liability for damages, costs or losses generated either by an installation that is not conforming to the prescriptions, by a defective operation or by poor maintenance. The use of this device is under the responsibility of the end-user. This device is neither designed nor guaranteed for the supply of life support applications or any other critical application with potential risks for human beings or for the environment. We shall assume no liability for patent infringement or other third-party rights involved in the use of this device.

1.4.3 Compatibility

WhisperPower guarantees the compatibility of the software updates with the hardware for one year, starting from the date of purchase. The updates are no longer guaranteed beyond this date and a hardware upgrade may be required. Please contact your reseller for any additional information on compatibility.

1.5 SAFETY PRECAUTIONS

1.5.1 Generalities

Carefully read all safety instructions before proceeding with the installation and commissioning of the device. Failure to follow these instructions might constitute a lethal physical danger but can also damage the functionalities of the device. Therefore, this manual should always be kept close to the device.

⚠	For any installation, the local and national norms and regulations in force must be strictly followed.

1.5.2 Warnings

- Wherever the system is, the person in charge of installation and commissioning must know the safety measures and the prescriptions in force in the country. Therefore, the whole maintenance must be carried out by qualified personnel.
- All components connected to this device must be conforming to the laws and regulations in force. Persons without a written authorization from WhisperPower are forbidden to do any changes, modifications or repairs whatsoever. Regarding authorized modifications and replacements, only genuine components shall be used.
- This device is meant for indoor use only and must under no circumstances be exposed to rain, snow or any other humid or dusty environment.
- If used in motor vehicles, this device must also be protected against vibrations by shock absorbing components.

1.6 PRODUCT RECYCLING

The WPC-CAN meets the European RoHS directive 2011/65/EU on hazardous substances and does not contain the following elements: lead, cadmium, mercury, hexavalent chromium, PBB or PBDE.

To dispose of this product, please use the service for collection of electrical waste and observe all obligations in force in the place of purchase.

2 EU DECLARATION OF CONFORMITY

The WhisperPower Center CAN to CAN Interface described in this manual meets the requirements specified in the following EU directives and standards:

Low Voltage Directive (LVD) 2014/35/EU

- EN 62368-1:2014/AC:2015
- Electromagnetic Compliance (EMC) Directive 2014/30/EU
- EN 61000-6-1:2007
- EN 61000-6-2:2005/AC:2005
- EN 61000-6-4:2007/A1:2011

2.1 CONTACT INFORMATION

WhisperPower contact details:

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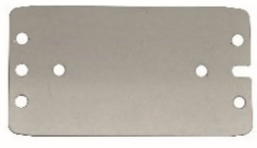
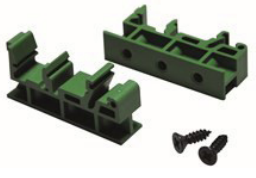
sales@whisperpower.com
www.whisperpower.com

3 MATERIAL NEEDED FOR THE INSTALLATION

3.1 CONTENTS OF THE WPC-CAN COMMUNICATION SET

The communication set WPC-CAN contains the following material:

One WPC-CAN module	
Two 2 meters communication cables, to connect the WPC-CAN to WhisperPower and external devices	
Mounting plate	
2 DIN rail clips and screws	
SD card with manual	

4 OTHER REQUIRED MATERIAL

Since the WPC-CAN is dedicated to communicate with a Suntrack (and the WPC in some applications) You will need a specific cable with the proper connector and pinning on each side. See chapter 5.2

⚠	This device should not be used for any purpose not described in this manual. The device is using RJ45 connectors frequently used and standard for LAN (Local Area Network). The WPC-CAN should never be used or plugged into communication networks other than the ones specified in this manual. This will seriously damage the product.

5 INSTALLATION OF THE WPC-CAN

This device was designed for indoor use only and must under no circumstances be exposed to rain, snow or any other humid or dusty environment.

As far as possible, reduce exposure to sudden temperature variation: important heat variation may create undesired and harmful condensation inside the equipment.

The WPC-CAN has been previously prepared at the WhisperPower factory so that it is ready for use.

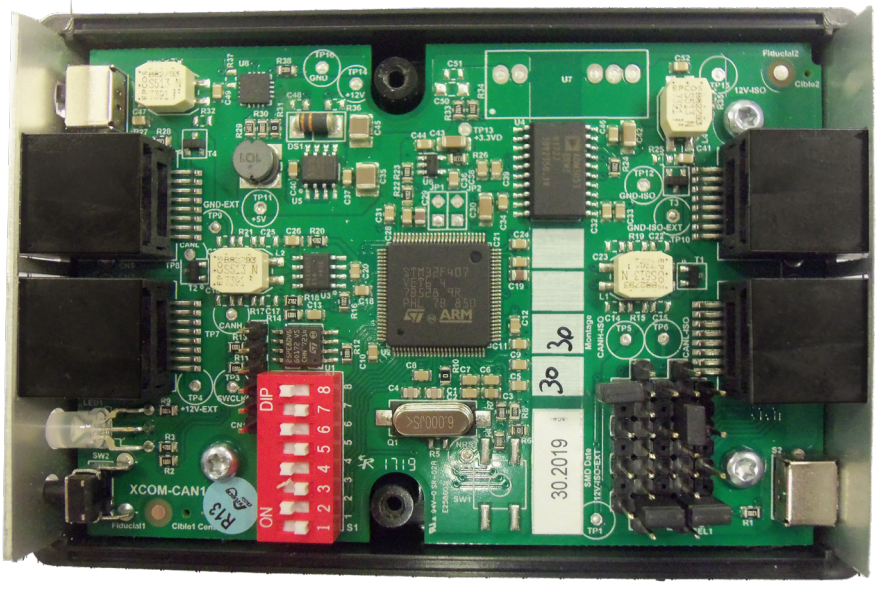


Figure 1: Electronic board inside the WPC-CAN

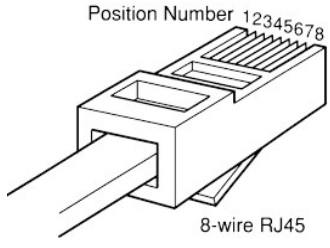
5.1 CAN BUS SPEED

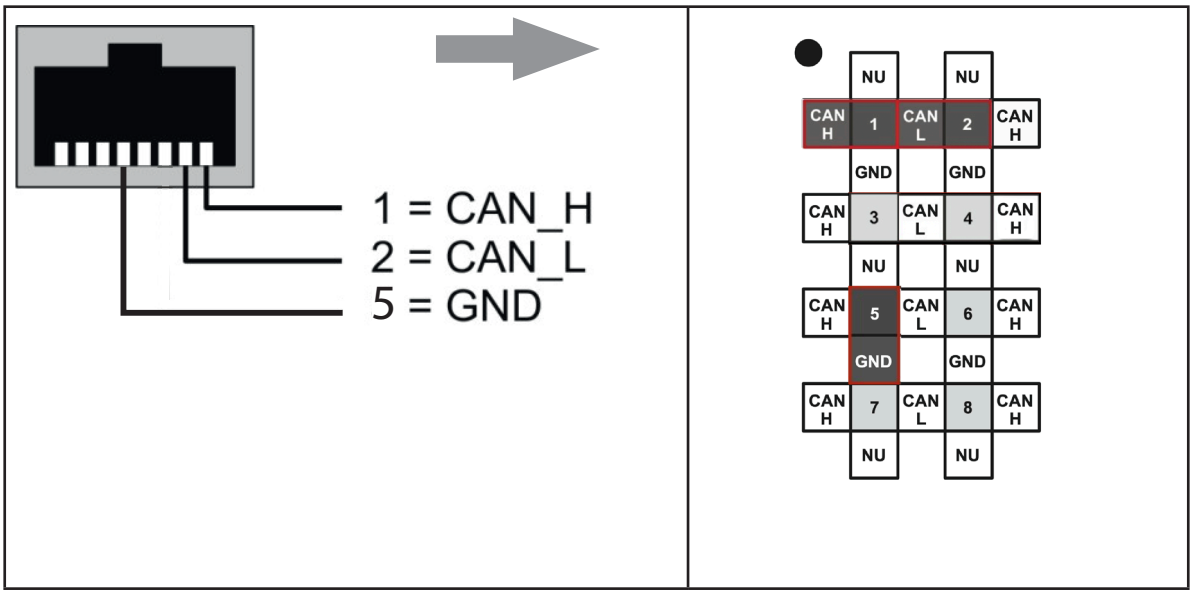
The WPC-CAN supports multiple speeds on the “CAN” side. This setting has been setup at the factory, and therefore it’s not necessary to change this setting later on. The default setting is 250kbps.

Position			CAN bus speed
6	7	8	
OFF	OFF	OFF	10 kbps
		ON	20 kbps
	ON	OFF	50 kbps
		ON	100 kbps
ON	OFF	OFF	125 kbps
		ON	250 kbps
	ON	OFF	500 kbps
		ON	1 Mbps

5.2 WIRING WPC-CAN

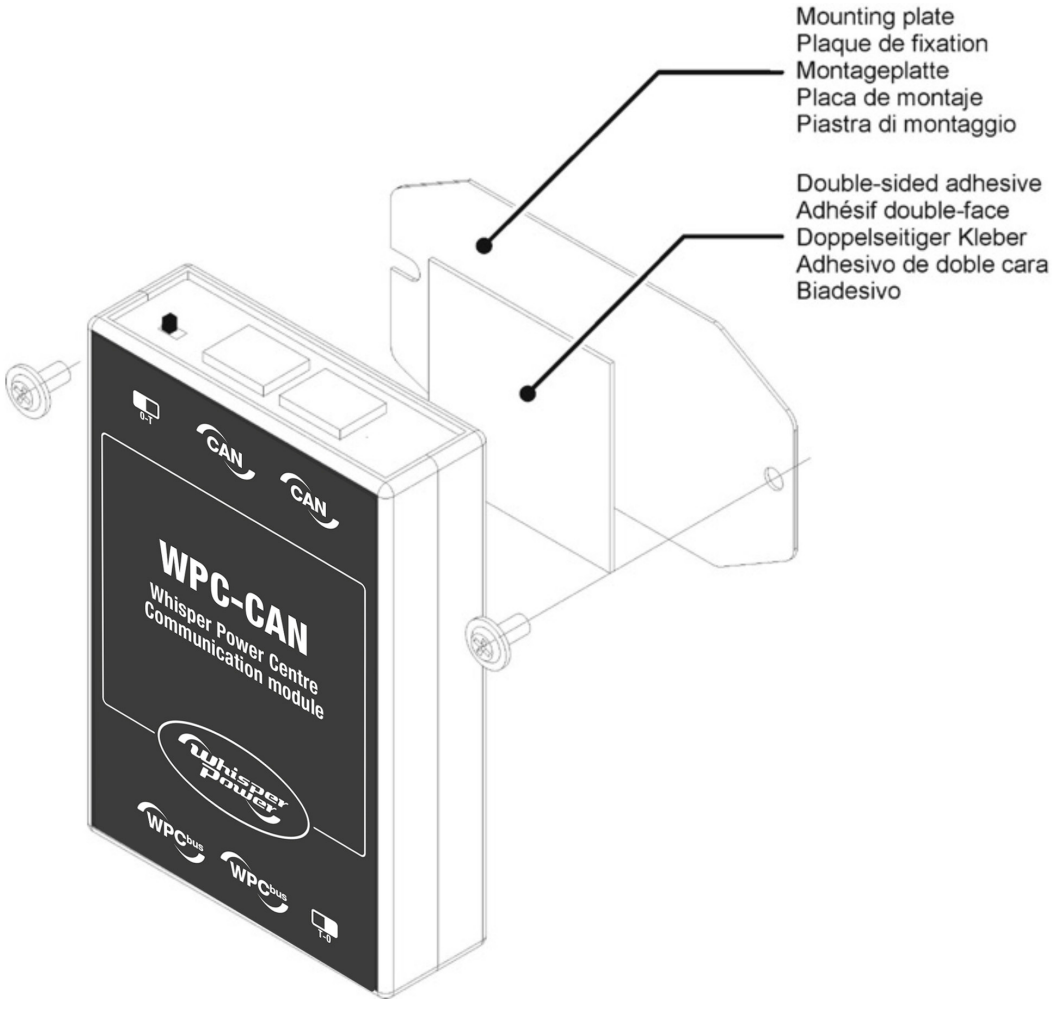
The task of the WPC-CAN is to let two seperate canbus networks talk together. On the WPC-bus side we connect the suntrack Pro or in some specific cases the WPC’s. WPC-bus side wiring is predefined and cannot be changed. The CAN side is where it continues as whisperconnect, and most likey connects to a touchpanel. Furthermore, the pinout on this side of the WPC-CAN has been setup in the factory (see illustraion below) and does not require any alterning.





5.3 MOUNTING

The WPC-CAN can be mounted directly on any support by means of the supplied fixing plate, on a smooth surface with double-side adhesive or on DIN rail using the DIN rail clips (part of the WPC-CAN communication set).



5.4 CONNECTION OF THE COMMUNICATION BUS (WPC-BUS SIDE)

The WhisperPower bus is daisy chained to the other XT/VT/VS WhisperPower components and is powered by the communication plug as soon as the upfront device is powered. The WPC-CAN module should not be installed between 2 devices powered by the battery. Connect the WPC-CAN module with the supplied cable (2m). This cable should not be extended.

⚠	Do not connect the WPC-CAN between devices connected to the battery. Do not connect the module to a device not connected to the battery (RCC or other Xcom).

⚠	The termination switch of the communication bus “Com. Bus” remains in position T (terminated) except when both connectors are used. In this case and only in this case, the switch must be placed in the O (open) position. If one of the two connectors is not used, the termination switch will be in position T. An incorrect setting of the link ends can lead to an erratic running of the system or impede its updating process.
ℹ	By default, the termination is set to terminated (position T) on each WhisperPower product.

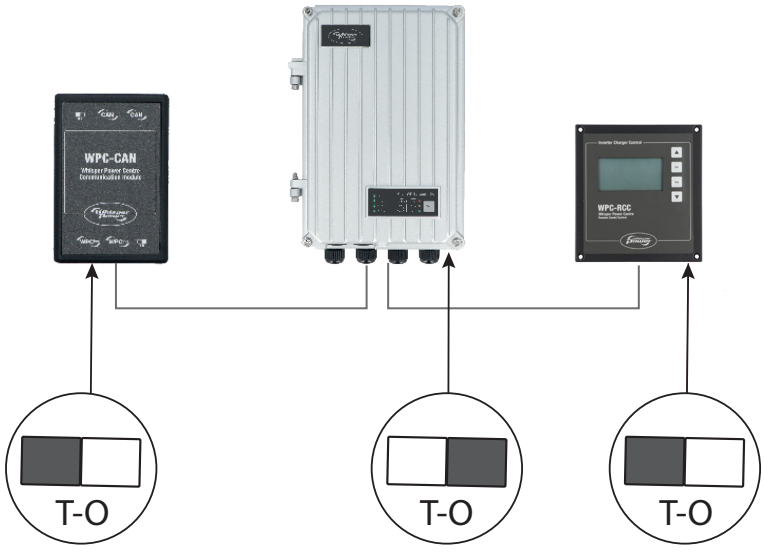
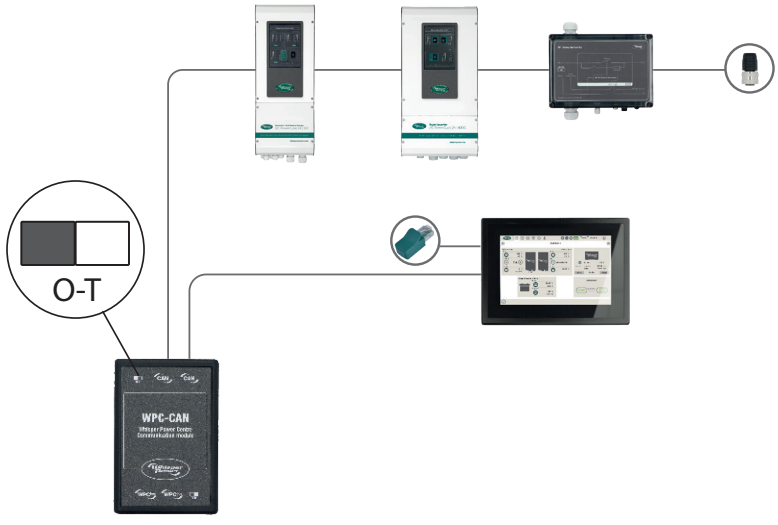


Figure 2: Connection schematic for WPC-CAN

5.5 CONNECTION OF THE COMMUNICATION BUS (WHISPERCONNECT)



5.6 BLINKING CODES AND PUSH BUTTON

Figure 3: Front and isometric view of the WPC-CAN

Key	Description
(a)	**Push button** (Not used / reserved for future use)
(b)	**Bicoloured signalisation LED (green/red)** The signalisation LED indicates different functions using colour and frequency of blinking. It is explained in chapter 5.1
(c)	**WPC-CAN communication connectors** These connectors allow the WPC-CAN to be connected with an WPC system. This is the WhisperPower communication side of the device. Do not connect your battery on it, neither any devices suited for standard Ethernet connection nor WhisperConnect devices.
(d)	**Switch for communication line ending** This switch activates or deactivates the communication bus termination. The termination is by default activated (terminated). In Figure 3, the termination is activated. Place the switch to the correct side: if there is only one cable connected on port c (com bus) put the switch in T (terminated) position. If there are two cables connected on port c (WPC-CAN connected to two other devices) place the switch in position O (open).

5.6.1 Signalization LEDs

Bicolour LED	Meaning
Blinks **2x** repeatedly in **GREEN**	The WPC-CAN is running without any error.
Blinks **1x** repeatedly in **ORANGE**	The WPC-CAN is currently starting up.
Blinks **2x** repeatedly in **RED**	The WPC-CAN is in error. See chap. 6.

5.6.2 Elements on the external CAN bus side of the module

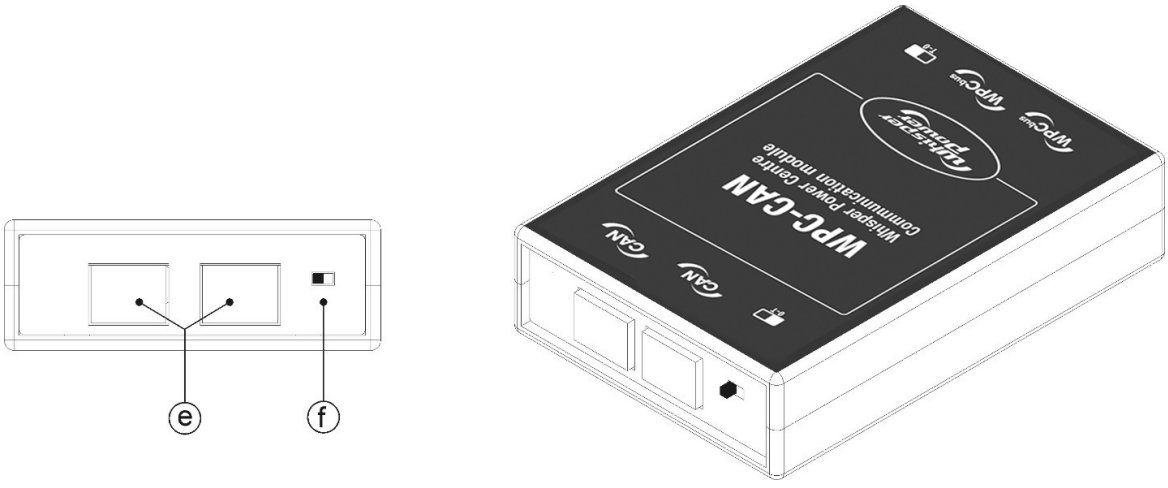


Figure 4: Back and isometric view of the WPC-CAN

Key	Description
(e)	**CAN connectors for an external network** These connectors allow the WPC-CAN to be connected to WhisperConnect. The cable pinning must be carefully checked before connecting any device at this point. Do not connect any devices suited for standard Ethernet connection.
(f)	**Switch for CAN termination** This switch activates or deactivates the communication bus termination. The switch is set to (O) in default. When only one cable is connected to port (E) add a WhisperConnect terminator.

6 TROUBLESHOOTING

There are different problems that may cause the WPC-CAN to malfunction. This list presents known irregularities and the procedures to follow to address them.

Symptom	Description
All LEDs are off	Your WPC-CAN is not powered correctly. Check that the module is correctly connected to your WPC system with the appropriate cable. See chapter 5.4
Red LED blinking	An emergency stop occurred or the communication with the battery or third party device is lost. The RCC screen will help you find the source of the problem. In case of an emergency stop: 1. Restart the battery system if it has stopped (switched off) or changed to limited power source (preload mode). 2. Check whether the battery is correctly connected with the WPC-CAN module. 3. Check that the CAN communication speed of the WPC-CAN module is corresponding to the one of the battery. The communication speed is indicated on the RCC under the menu “System info”. Use the arrows to find and select the WPC-CAN. 4. Check that the jumpers are correctly positioned. See chap. 5.4 5. When the LED is blinking normally again (Blink 2x green), turn on the WhisperPower devices that were turned off by the emergency stop, one by one.

7 SOFTWARE UPDATES

In case of requirement of software upgrade of the system through the RCC unit, the WPC-CAN is automatically upgraded. For more information visit our website www.whisperpower.com.

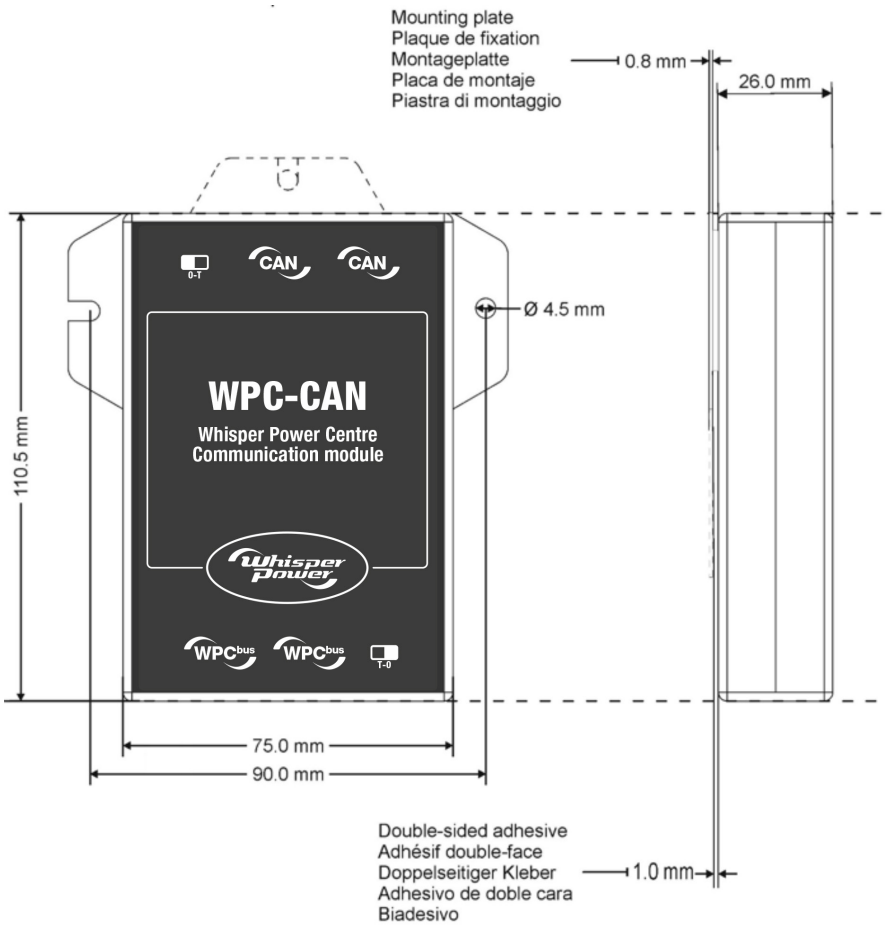
7.1 UPDATING PROCESS

⚠	Turn off all inverter units before making the update. If not manually done, the updating process will automatically stop all WPC connected to the communication bus.

To carry out an update, insert the micro SD card (containing the latest software version) in the RCC's micro SD card reader. Before starting the updating process, the system automatically checks the compatibility between the devices and the software present on the micro SD card. The micro SD card must **NOT BE REMOVED UNTIL THE END OF THE UPDATING PROCESS. IF FOR SOME REASON THE UPDATING PROCESS IS INTERRUPTED, REINSERT THE SD CARD TO LET THE PROCESS FINISH.**

ℹ	The updating process can take between 3 and 15 minutes. During this period, it is possible that the signalisation LED does not respect exactly the cyclical ratio described.
ℹ	The updating of a remote control RCC, WPC RS-232i must be done directly on the connected device.

8 DIMENSIONS



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