

**GENERAL
INSTALLATION MANUAL FOR
LEISURE VEHICLES**



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Introduction

Dear installer,

Thank you for installing the CaraControl system into the vehicle. We firmly believe this manual will assist you to the maximum effect. All steps shall be demonstrated to you one by one. In case of any misunderstandings, feel free to consult our technical support.

Before and while installing the product, please read these instructions thoroughly.

Safety warnings and instructions

1. Carefully unpack the product and beware of throwing away any parts of the packaging material before finding all parts of the product.
2. Product is not intended to be installed by individuals (including children) with reduced physical, sensory or mental abilities, for individuals with limited experience or knowledge without professional supervision or without given instruction of use of this product by a person responsible for their safety.
3. Do not expose this product to extreme temperatures or direct sunlight.
4. Do not submerge the product in water or other liquids.
5. Manufacturer is not responsible for damages caused by inappropriate installation of the product.
6. The product is intended to be installed at the professional service point.

Contents and product description

CaraControl Basic / Security Package

Product consists of the on-board unit and installation wiring. These are packed and delivered concurrently. The list of contents of the packaging corresponds with the installation diagram, which is a part of this manual. Individual products are tagged with codes in CCxxxx format.

First steps

Unboxing products

Basic / Security Package

Take CaraControl Package, open the box and pull the Onboard unit with the insert out of the box. Underneath it you shall find a folded Installation Diagram and NB-IoT SIM-card. Pull these out of the box. Remove the final insert, underneath which you shall find installation wiring and antennas. Pull these out in the visible place. Check if the Package matches the wiring and antennas found on the Installation Diagram. Beware of throwing any parts away.

Optional wirings

Open the minigrip bag and pull out the wiring and Molex housings if present. Beware of throwing any parts away.

Recommendations

To maximise the effectiveness, accuracy and to possibly reduce the installation time, we firmly recommend keeping CaraControl Installation Diagram and electroblock schemes together and observe them with each step you take. The Installation Diagram might help you with the allocation and description of wires needed for interconnection.

You can download the diagrams right here:

<https://www.caracontrol.eu/page/downloads-25>

Schaudt support page:

<https://www.schaudt.gmbh/de/service-support/downloads.php>

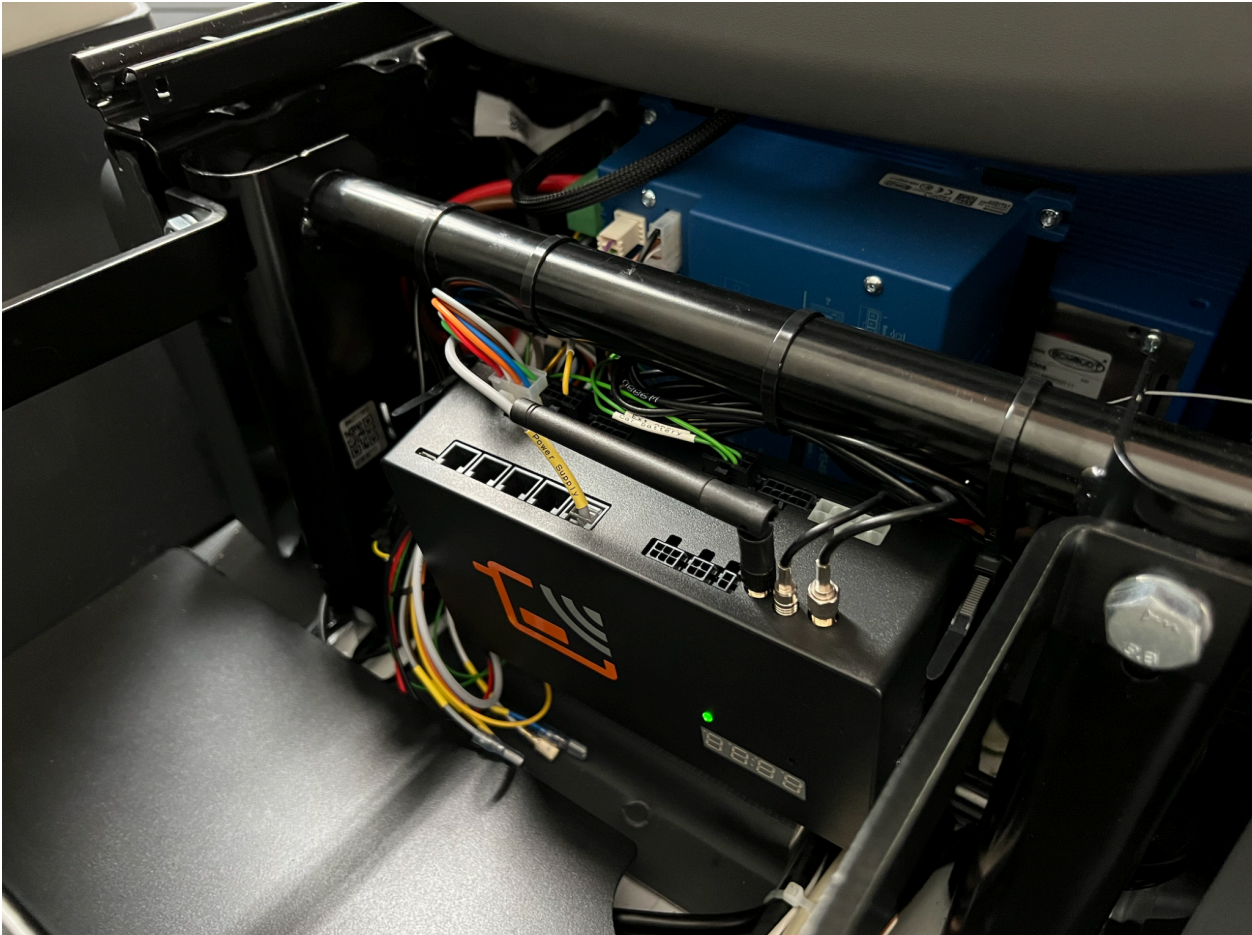
Related manuals:  EN Manual - CaraControl App

Location for the On Board Unit

Figuring out where to place the Unit is an essential part of the installation, because the rest of the installation is going to depend on it. The placement location is up to you, but we firmly recommend placing the Unit in or near the power supply / electroblock area. This is because of the length of certain wirings included in the package.

Look at the examples in the pictures below. As you can see, the On Board Unit is placed in a dry zone, directly in the power supply / electroblock area.





Connection of Power wiring

In order for the On Board Unit to get power, this wiring needs to be connected to the leisure battery's positive and negative poles. For this step we have applied ring terminals to the power wiring (GND & Vcc.) for easy and reliable installation. See the picture below.



Connection to the pole using the ring wire end

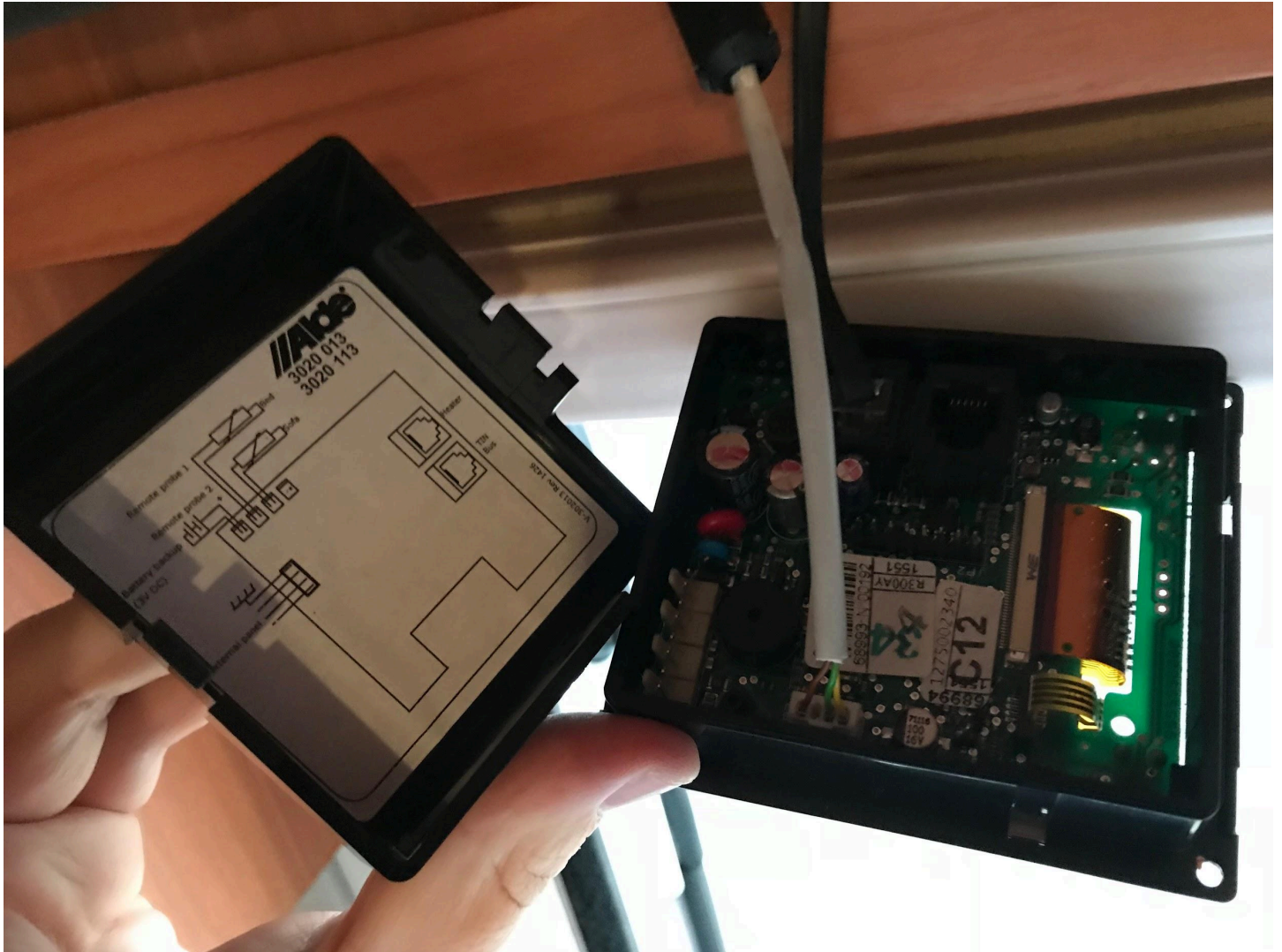
Truma / Alde heating connection

This section will explain the installation and interconnection of the Truma and Alde heating systems. Remember to consult the CaraControl and electroblock diagrams for detailed information.

Alde 3010 / 3020 / 3030 heating systems

Alde 3010 (613) and 3020 (013,113) panels

Take CCW006 cable for Alde and lead the cable from the heating panel through the furniture and double floor all the way to the power supply area, where the Unit will be installed. If the Alde cable is too short, you can order a CCW008 10m cable for Alde. Once the cable is led through, insert the connector in the External panel port as shown in the picture below.

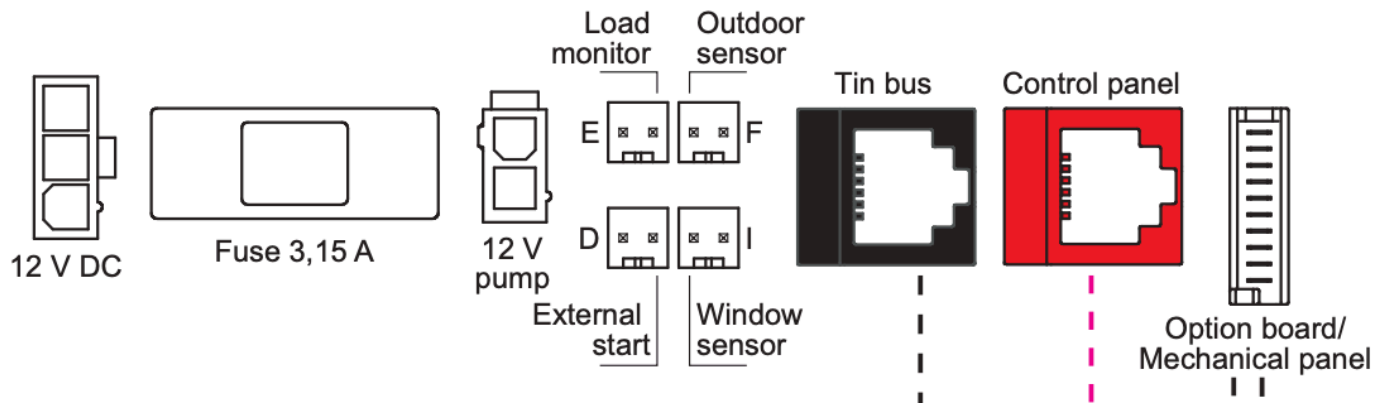


DISCLAIMER!

Check the type of a panel, different panels need to be connected with different cables. By recognizing that type in advance you preserve installation time.

Alde 3020 / 3030 iNet Ready

You can connect the cable as shown in the picture below and plug it into the TIN-BUS connector at the side of Alde boiler.

Circuit board on Compact 3020 HE boiler

Alternatively connect CCW007 cable for Truma iNet and plug the cable into the panel using a coupler as shown in the picture below.



In the case you have upgraded the panel Alde 3010 (613) or 3020 (013,113) to Alde 3020 iNet Ready, you have also to use CCW006/008 cable instead of CCW007/CCW009. Don't use the EXT panel option in its menu and perform the pairing process of the Alde boiler in the App again.

DISCLAIMER!

Be sure that no other control device is connected to the line, such as Truma iNet Box.

The connection happens only between the panel, boiler and the CaraControl unit.

Be sure you connected the cable properly, where one side marked with label "Heating port" is connected to the CaraControl unit and the other side tagged with "Truma panel" is connected to the Truma / Alde panel or boiler.

Truma heating systems

Truma iNet Ready CP Plus panels

Take CCW007 cable for Truma and lead the cable from the boiler through the furniture and double floor all the way to the power supply area, where the Unit will be installed. If the cable happens to be too short, order CCW009 10m cable for Truma iNet.



Alternatively, disconnect the original RJ connector from the Truma panel and insert it into the free port on the coupler. Then connect the remaining cable into the panel as shown in the picture below. First, remove the panel as shown in the picture below.



Once you remove the panel, interconnect the original cable with our coupler and connect our cable back into the panel as shown in the picture below.



DISCLAIMER!

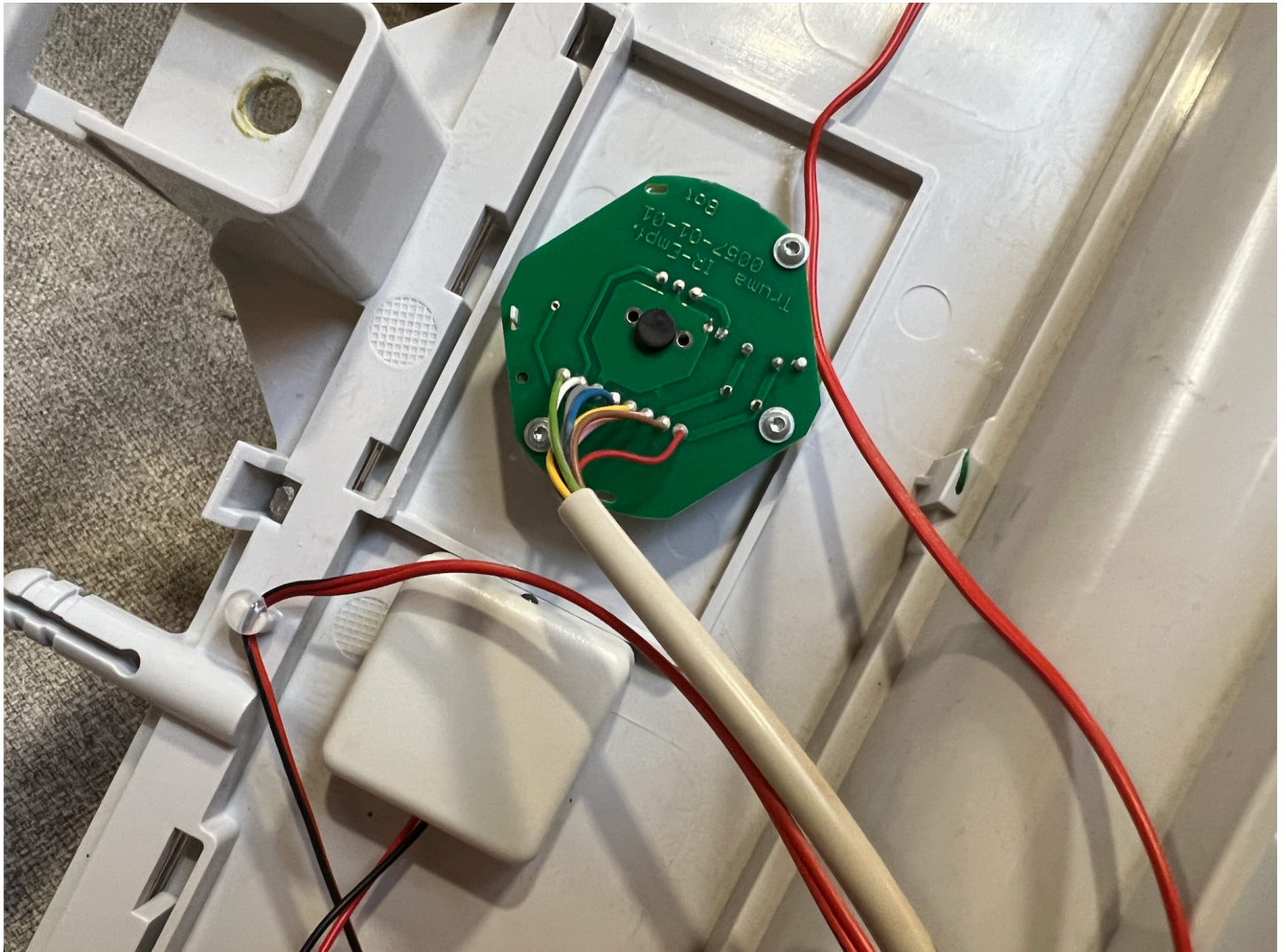
Be sure that no other control device is connected to the line, such as Truma iNet Box.
The connection happens only between the panel, boiler and the CaraControl unit.

Be sure you connected the cable properly, where one side marked with label "Heating port" is connected to the CaraControl unit and the other side tagged with "Truma panel" is connected to the Truma / Alde panel or boiler.

Air Conditioner

This section will explain the installation and of the air conditioners control using Wireless IR transmitter CCA009. This transmitter works basically as a mimic of your factory remote control.

The transmitter needs to be installed with its IR LED towards your air conditioner IR receiver. The transmitter needs to be powered by 12V installation of your RV, when the communication with the CaraControl unit happens wirelessly.



The best option for installing our IR transmitter is to insert it directly into a frame of your air conditioning unit. This ensures that it is hidden inside its frame and you can also easily connect 12V power at this point.

Link to the manual: <https://www.caracontrol.eu/page/downloadFile/117/downloads-25>

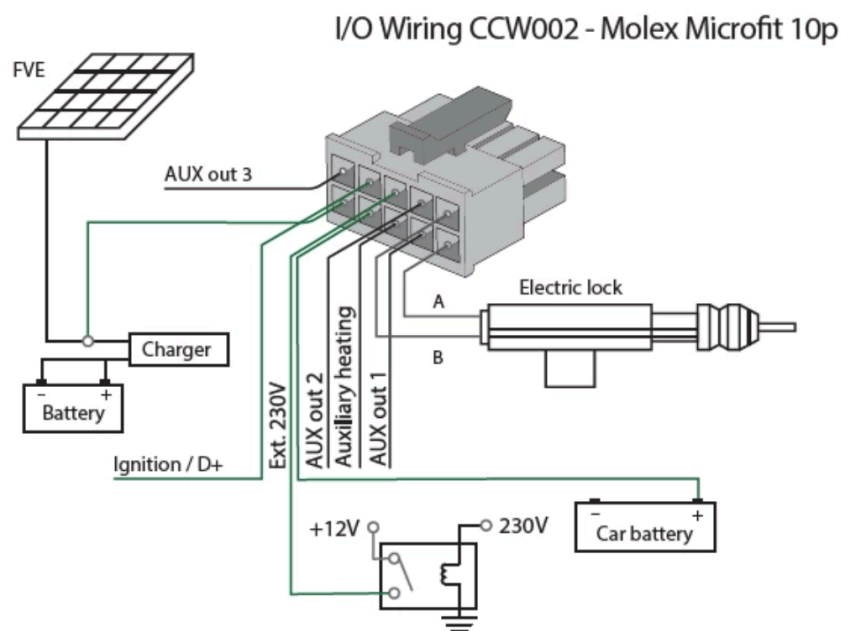
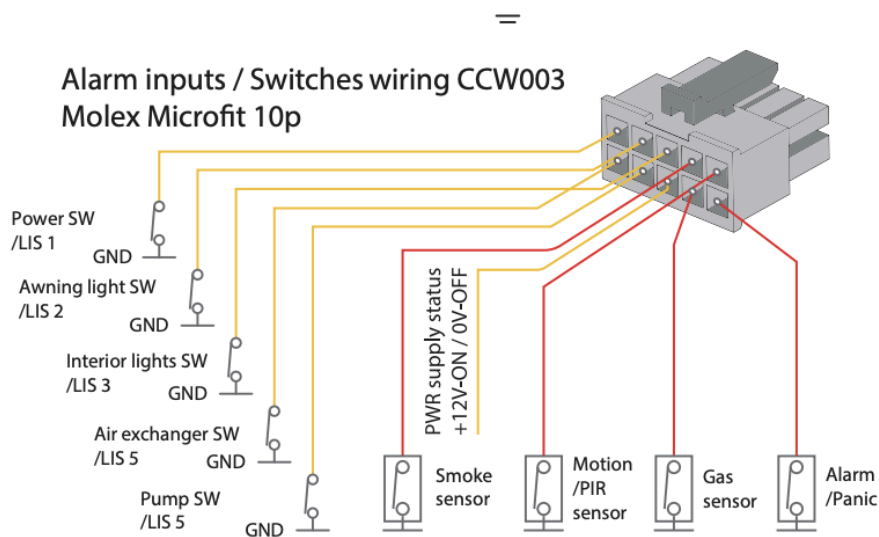
Connecting electroblock

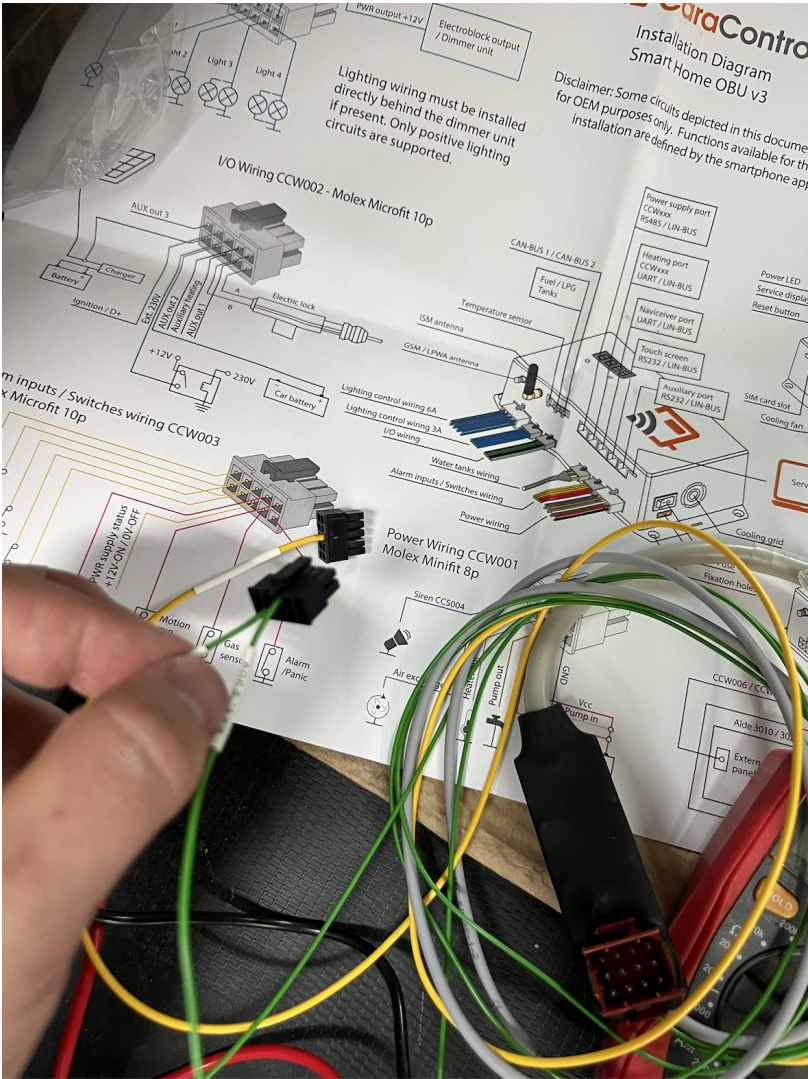
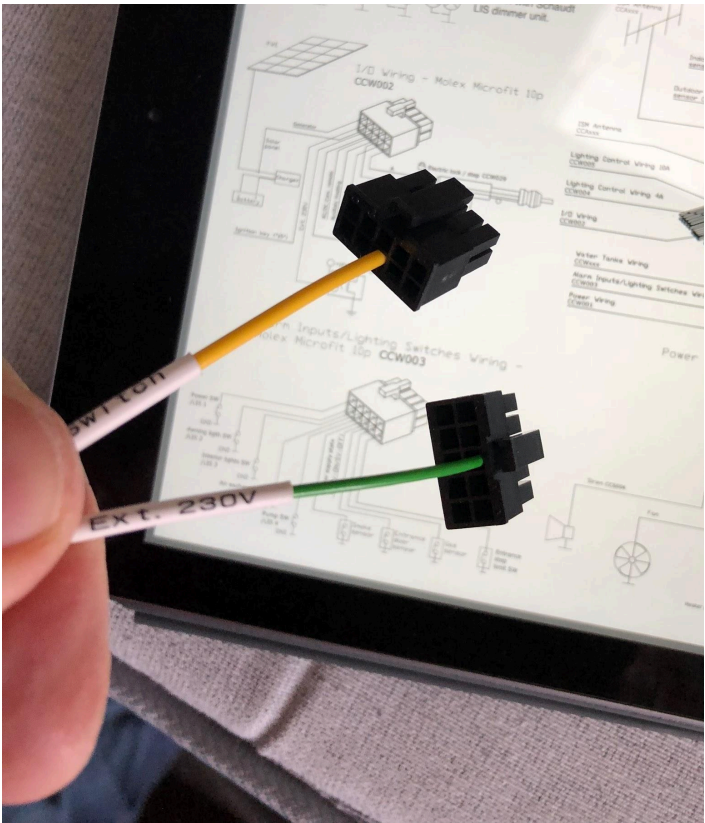
Schaudt electroblocks

Preparing Schaudt electroblock wiring

Prepare the Schaudt wiring by inserting the wires marked as below into the Molex Microfit connectors. For the CCW003 wiring you need to locate the wire with “**Main Switch**” tag on it for PWR supply status, for the CCW002, you need to find wires with tags “**Ext. 230V**” and “**Car Battery**” (optional). For your convenience, these tags can be found on Schaudt Wiring.

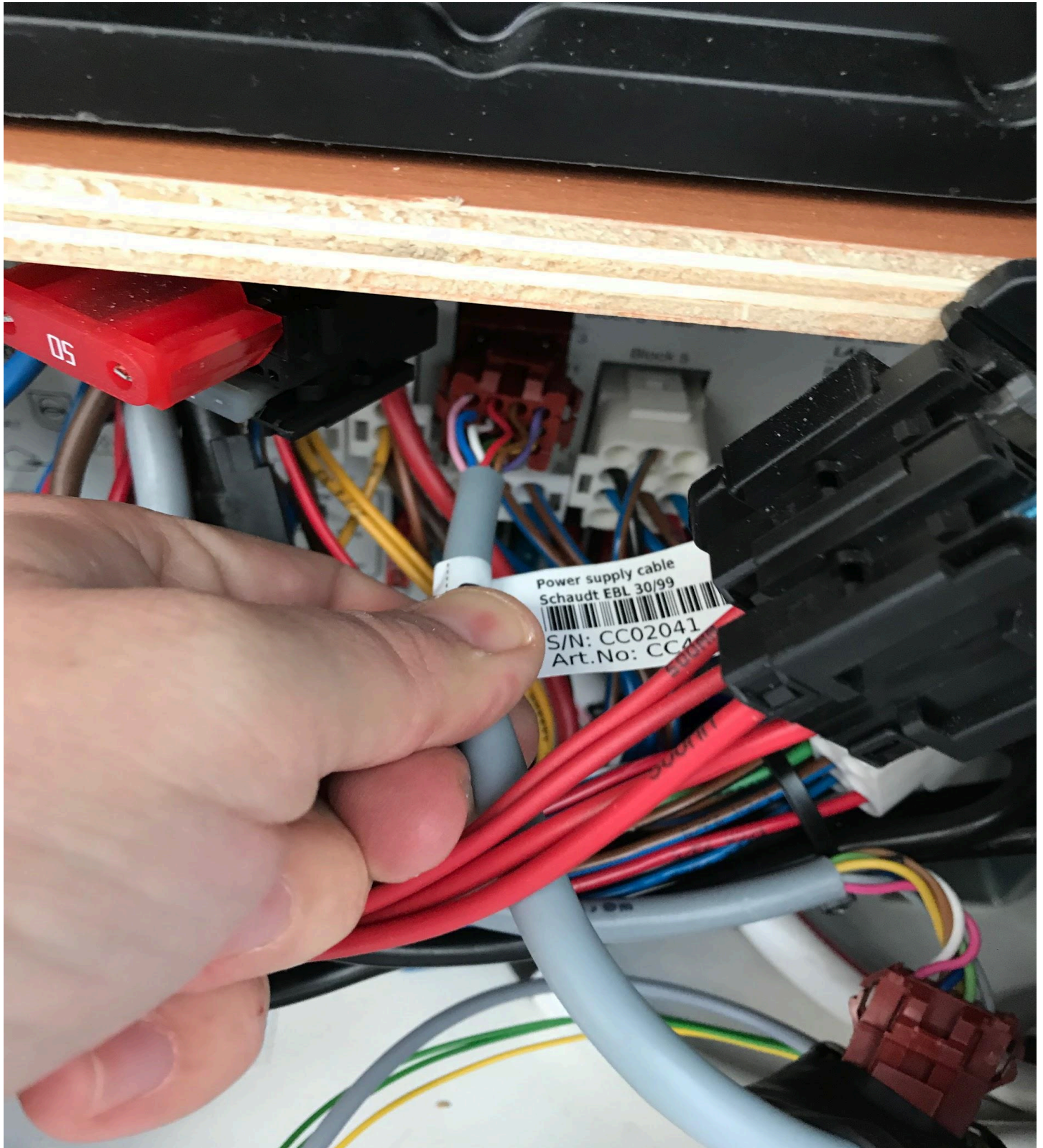
Link to the manual: <https://www.caracontrol.eu/page/downloadFile/96/downloads-25>

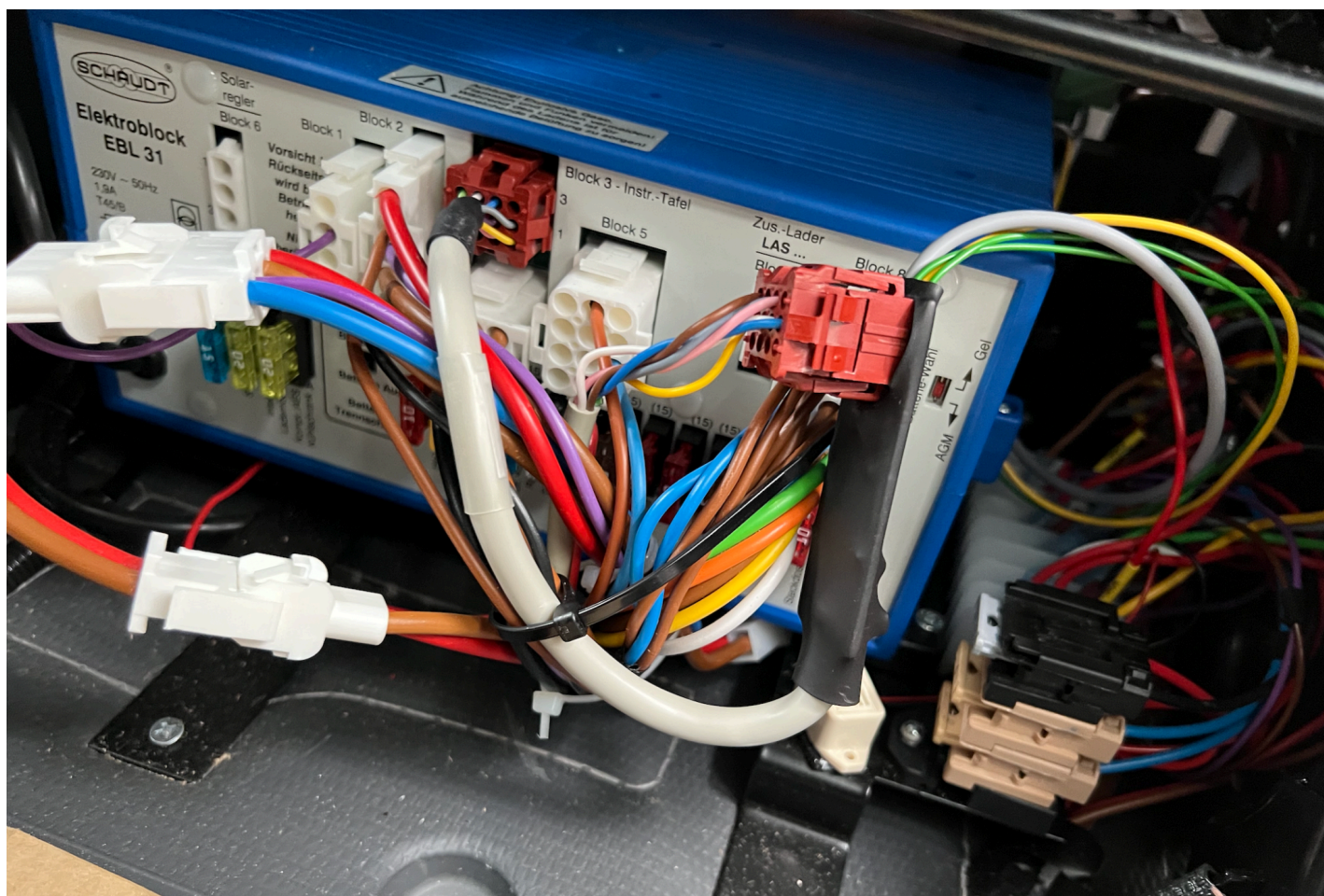




Go to the electroblock, switch the panel off and unplug the original connector from the panel's port. Connect CaraControl's cable into that port. Take the original cable and connect it to the adaptor plug found on the wiring, as shown in the pictures below.

Plugging the CaraControl wiring into the electroblock. Interconnecting the original panel wiring with the adaptor

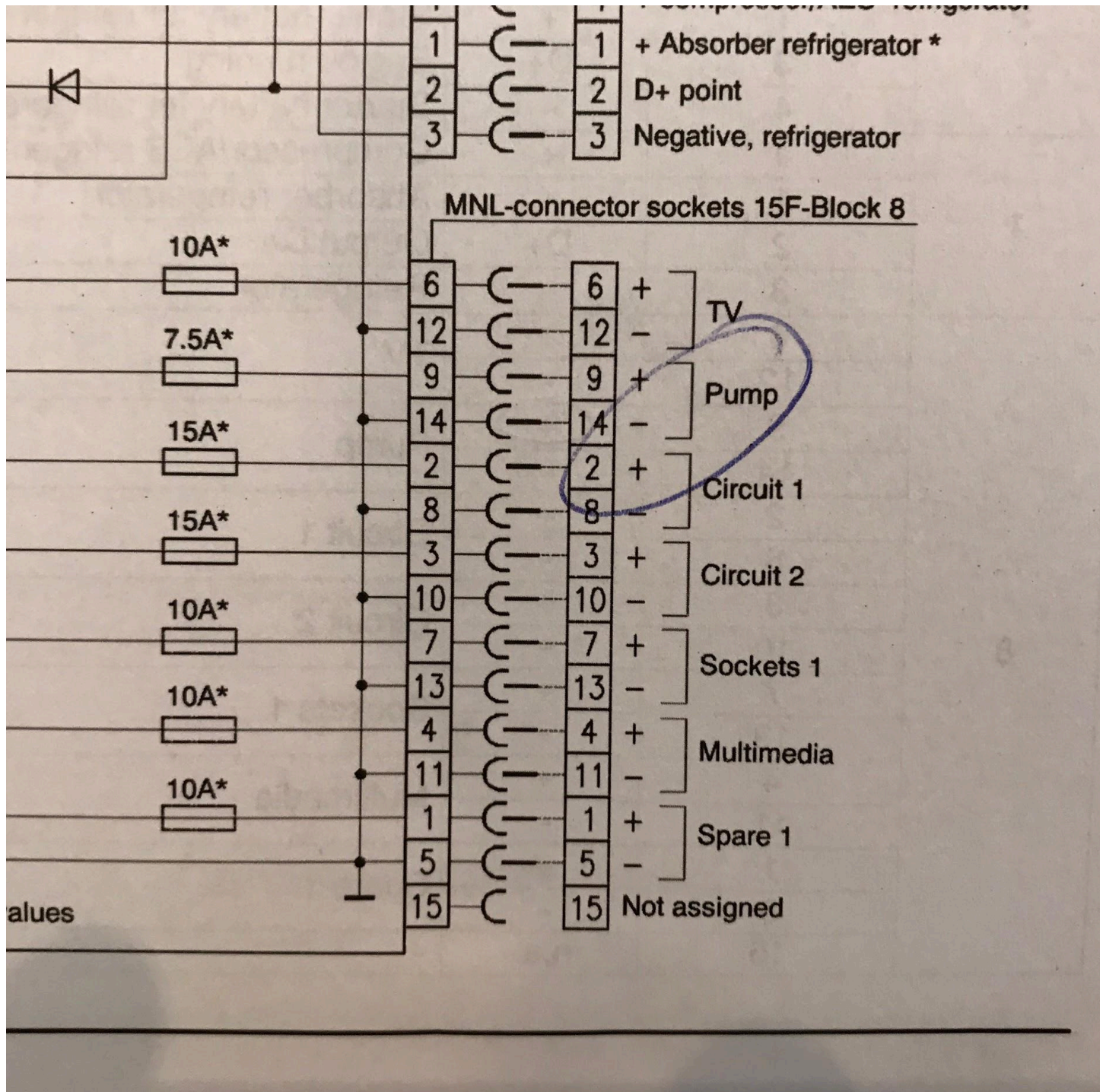




Connecting the water pump (Schaudt or Standalone mode)

Finding a correct wires in the Schaudt manual

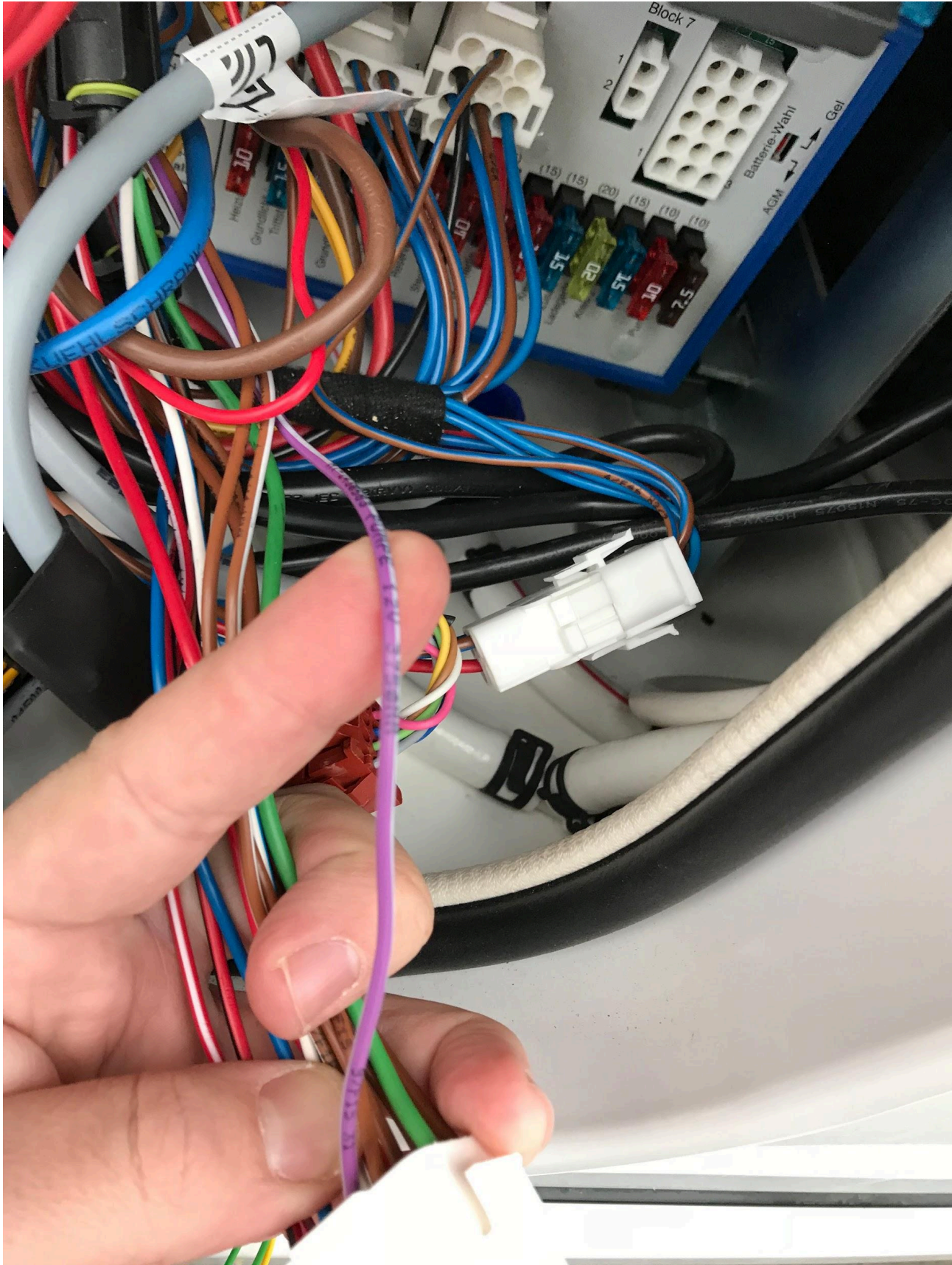
First you need to consult a Schaudt Instruction Manual to find out where the **Pump IN** and **Pump OUT** wires are located. You need to look for the connected set of cables, as shown in the pictures below. In this case the wires for Pump are located on the MNL connectors on 15F-Block 8.



We discover that we will be connecting the Pump to the + pole on the ninth pin on the connector.

The interconnection of cables

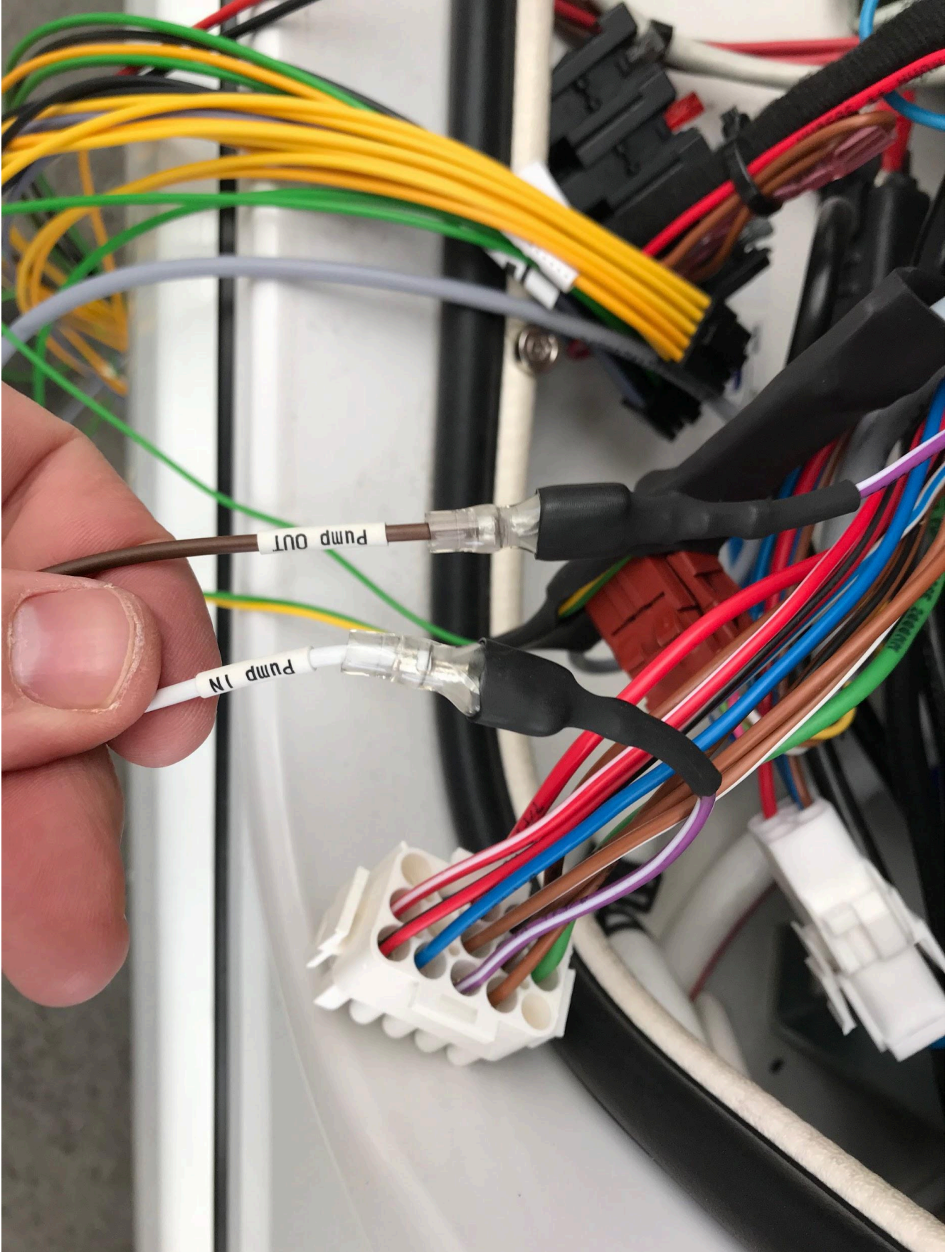
Take the correct Pump wire and cut it with the cutting pliers or disconnect a FASTONS from the electroblock.



The female and male connectors are best applied with the pressing FASTON pliers, as shown below.



Interconnect the Pump IN and Pump OUT wires as shown below. When you are done, connect the block back into Schaudt electroblock to its plug. In some cases you don't have to cut a wiring because they are already FASTON terminated.



Installing the Water tanks wiring (Schaudt and Standalone mode)

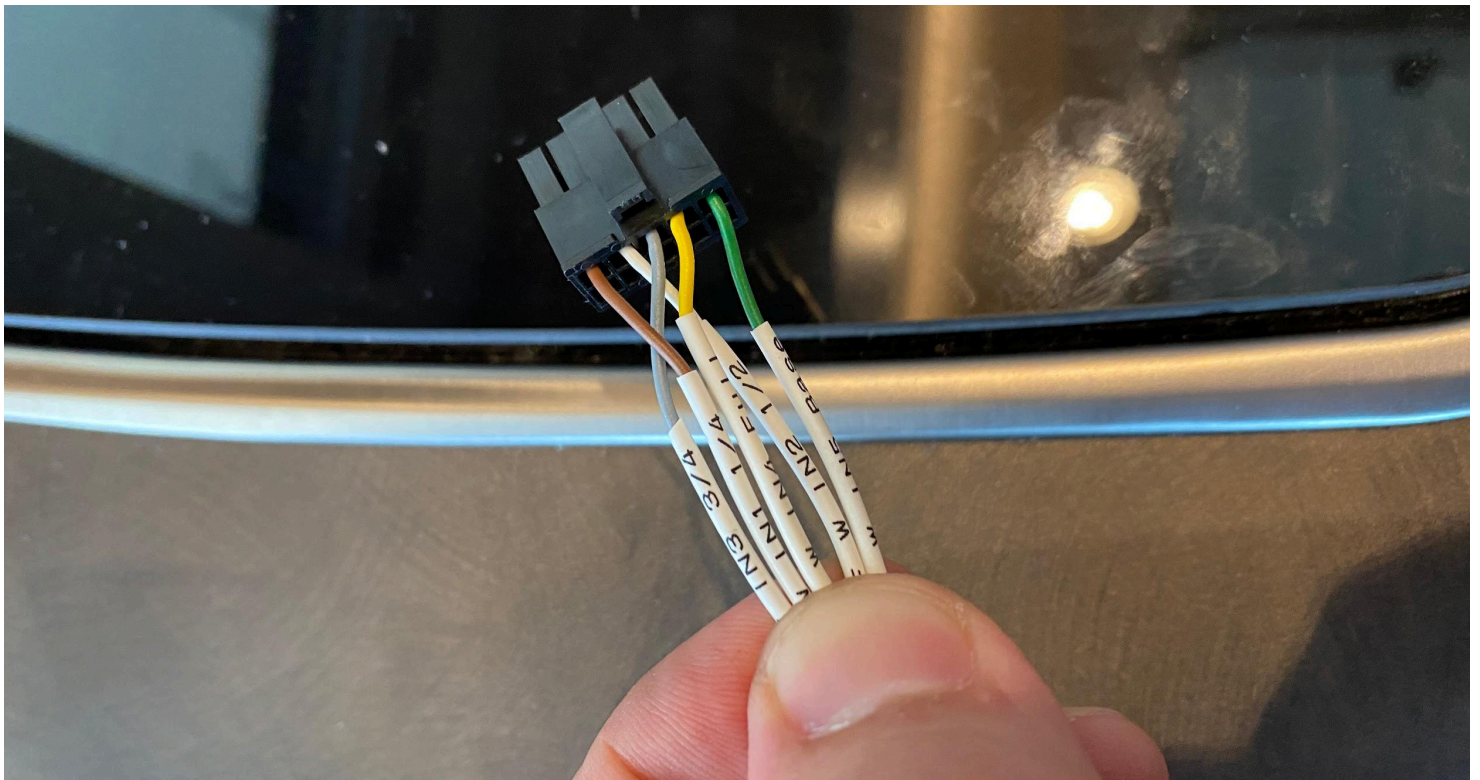
There are two ways this wiring can be connected. You can either connect it directly to the probes or to the control panel. The connection depends on the type of wiring you purchase.

Link to the manual: <https://www.caracontrol.eu/page/downloadFile/115/downloads-25>

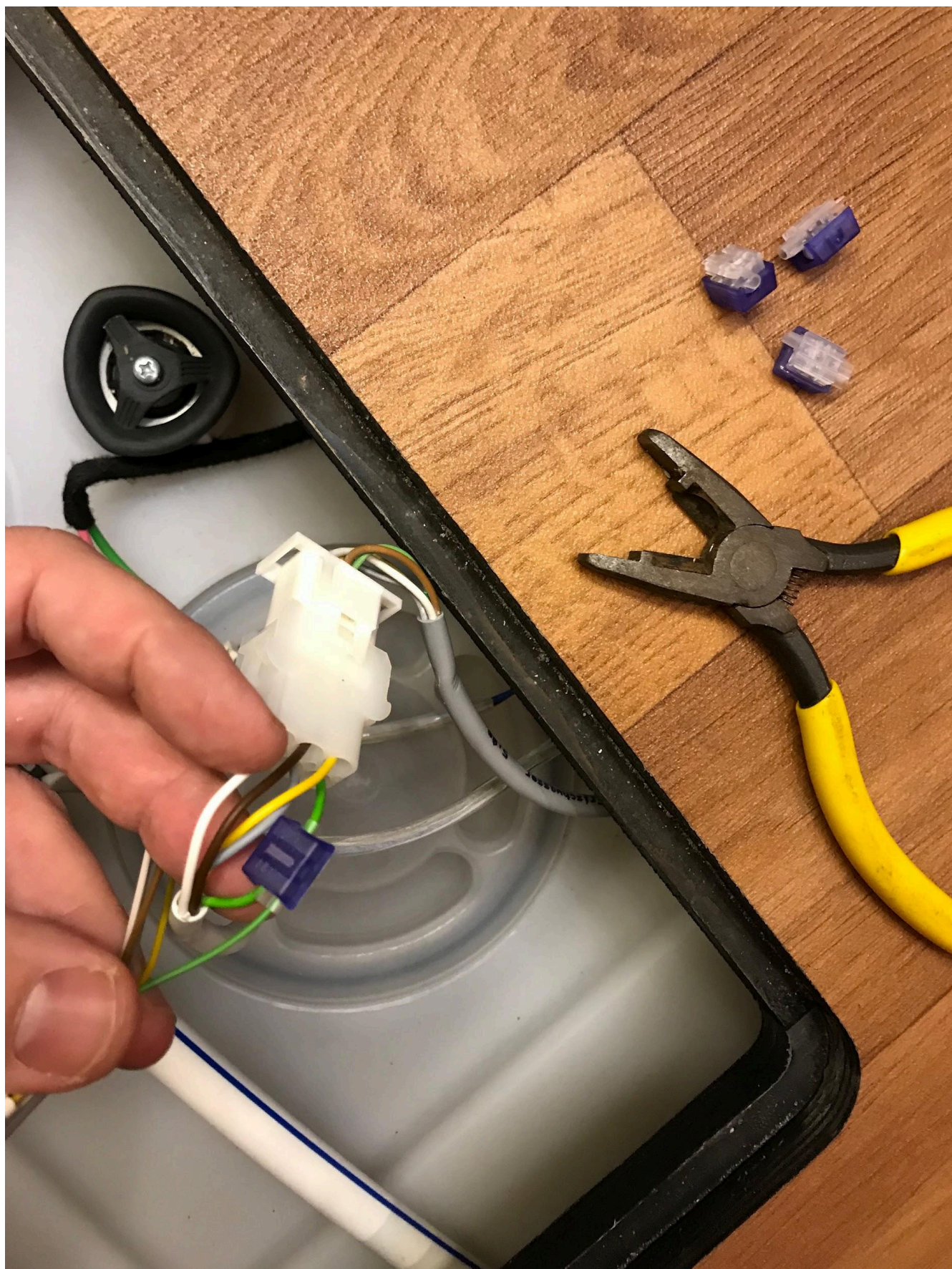
Alternative 1: Connecting the wiring to water probes directly

Consult the water tanks installation manual and see which cables are meant for freshwater tanks and which ones are meant for waste water tanks and which cable colour represents the status of the water tank level.

On the side of the CaraControl unit, match the pinout with the probes according to how the original cables were pinned - **different manufacturers use different pinouts and colours**.

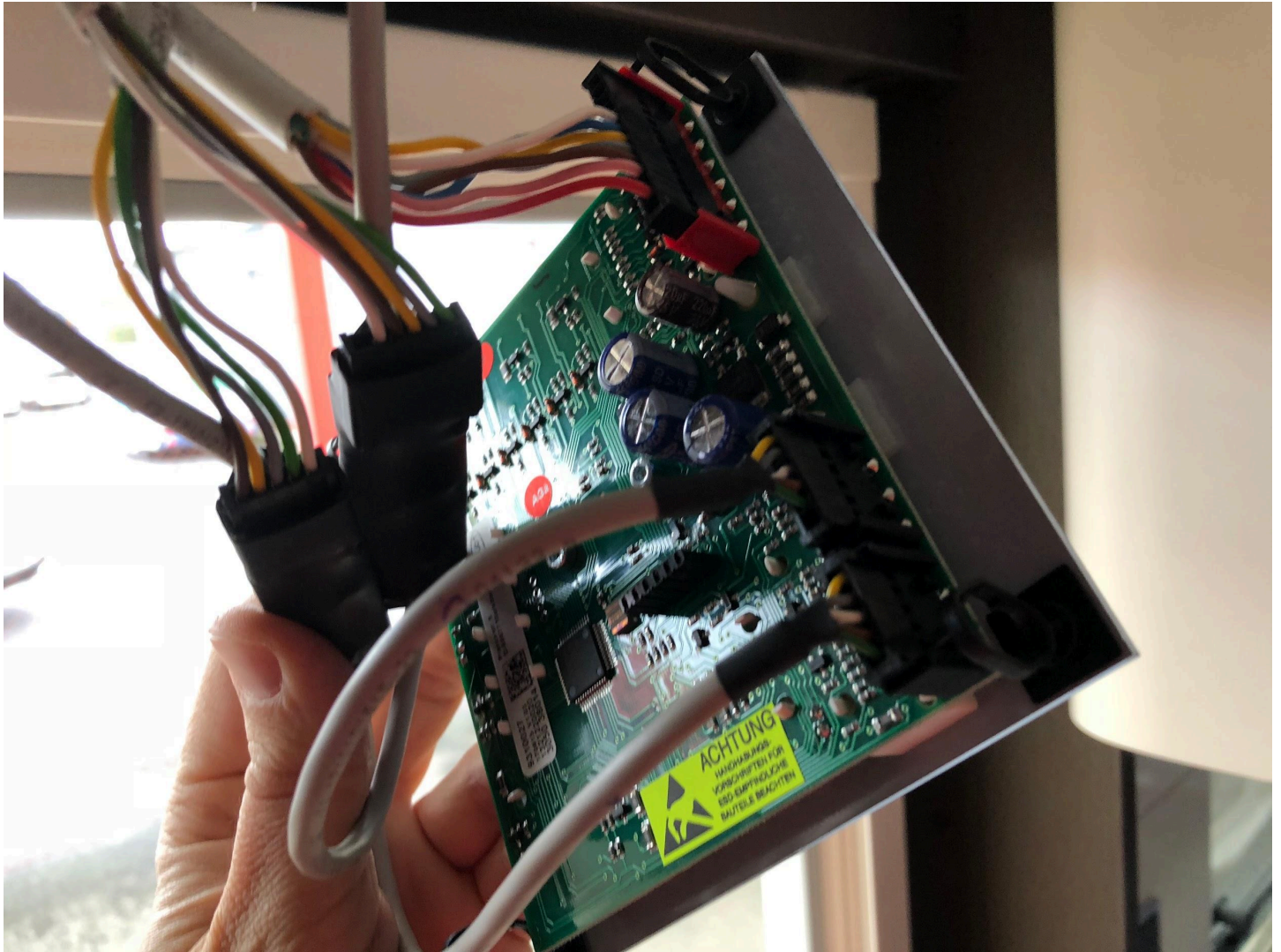


Interconnect our cables with existing water probes to their respective cables using 3M Scotch Locks.



Alternative 2: Connecting the wiring to the electroblock's control panel using CCW019/20 or CCW027/28 wiring

Remove the control panel from the wall and pull out the original water probes connectors from their respective ports. Plug our connector(s) in the port and plug the original connectors to our interconnection module found on the water tanks wiring.



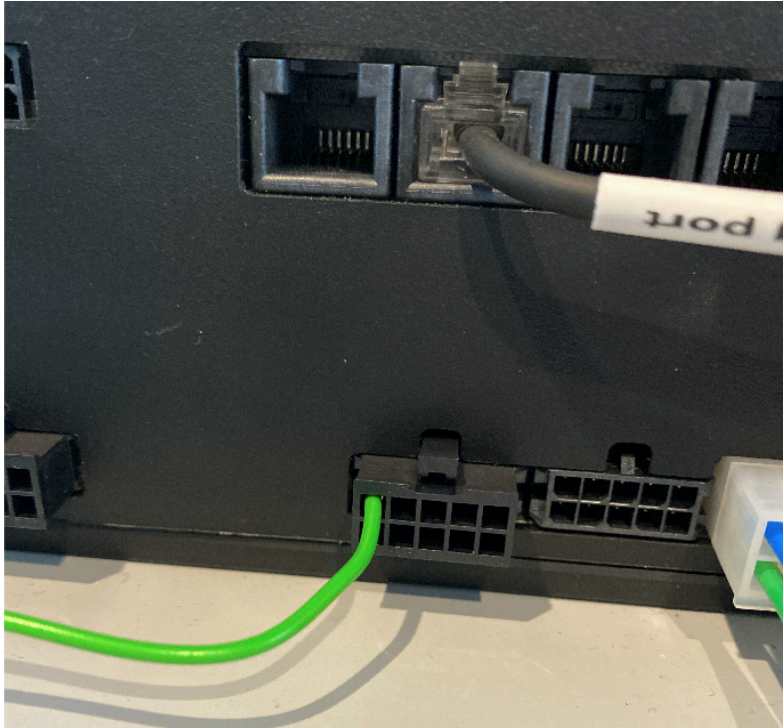
DISCLAIMER!

Be sure that no other device is connected to the water probes, such as the Schaudt AD converter for Zenec. The connection happens only between the Schaudt panel, water probes and the CaraControl unit. To display measured values on Zenec naviceiver additional wiring CCW029/CCW30 has to be used.

Alternative 3: Connecting the electronic probes with voltage output 0-2,2V

There are two voltage inputs for Votronic or Büttner water probes available on the Molex Microfit connector. Use pin no.10 for fresh water tank and pin no.5 for a waste water tank.

This measurement is then displayed per 20% steps for each tank and works in **Standalone mode** only.



CBE DS300 electroblock

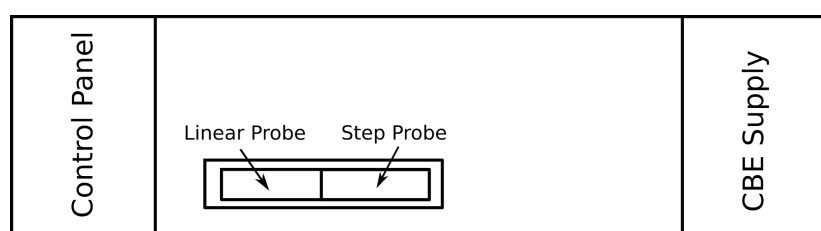
For CBE DS300 electroblocks, there is the adaptor CCW011 available. This adaptor simplifies the whole installation for you and allows you to control and connect with the CBE panel as well.

The adapter is equipped with a mechanical switch for the selection of CBE panels and fresh water probe type installed. This adapter supports only one state waste water probe.

By using this switch you can select between 3-level and linear electronic fresh water probes.

CBE panels PC100, PC110 and PC180 use 3 level probes SP5/40, while panels PC200, PC210, PC220, PC320 and PC380 use SPE electronic probe.

Link to the manual: <https://www.caracontrol.eu/page/downloadFile/109/downloads-25>



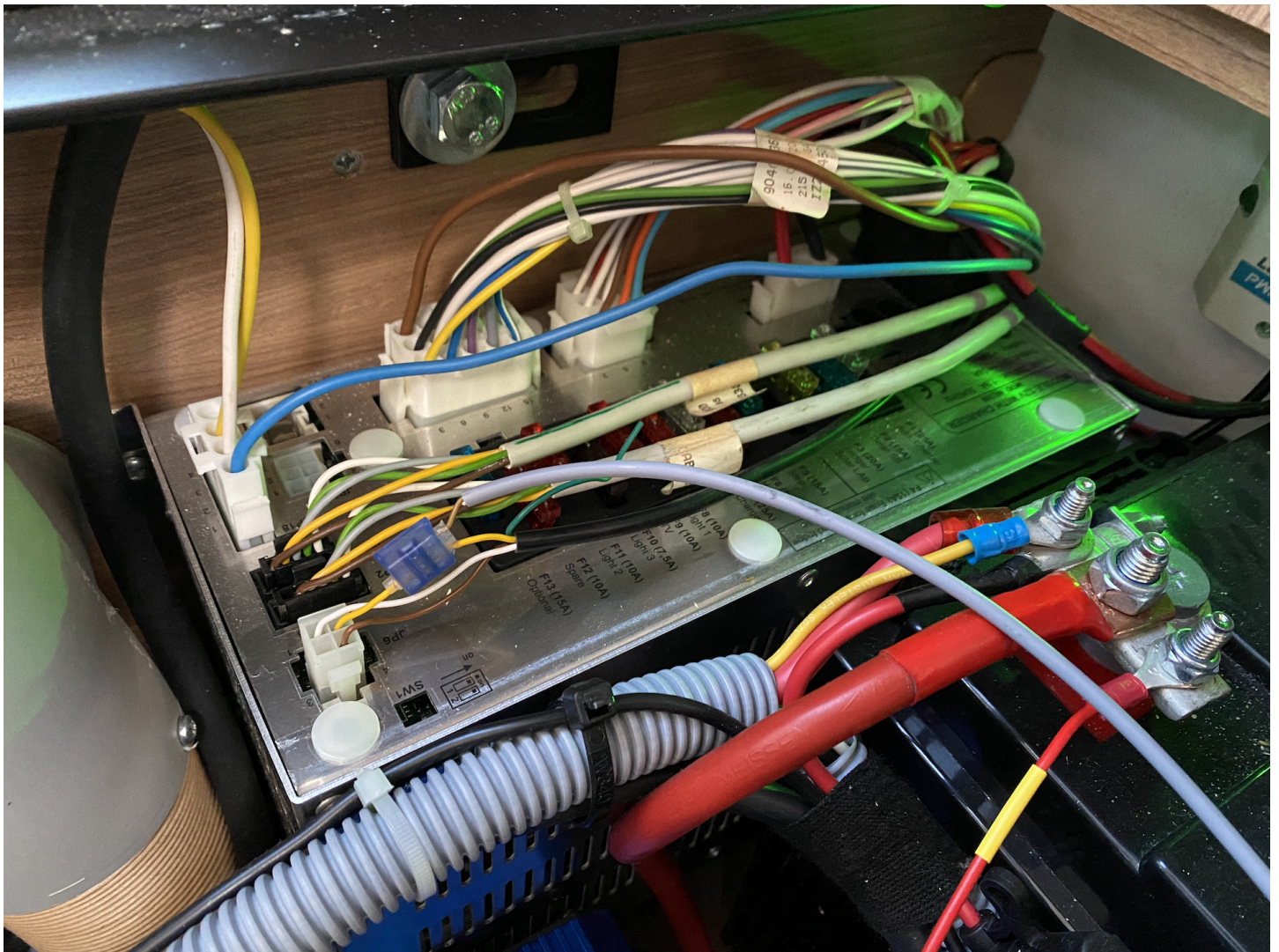
Nordelettronica NE196, NE356, NE237 and NE350 electroblocks

Nordelettronica NE196, NE356 and NE237

Simply unplug the panel connector JP6 (NE237) from the electroblock and plug it into the CCW010 adaptor. Plug the connector of the adaptor back to the JP6 (NE237) into NE electroblock.

Nordelettronica NE350

Connect to the yellow wire of the JP6 connector, pin no. 2 using a fast tapping Scotch Lock coupler.



Link to the manual: <https://www.caracontrol.eu/page/downloadFile/114/downloads-25>

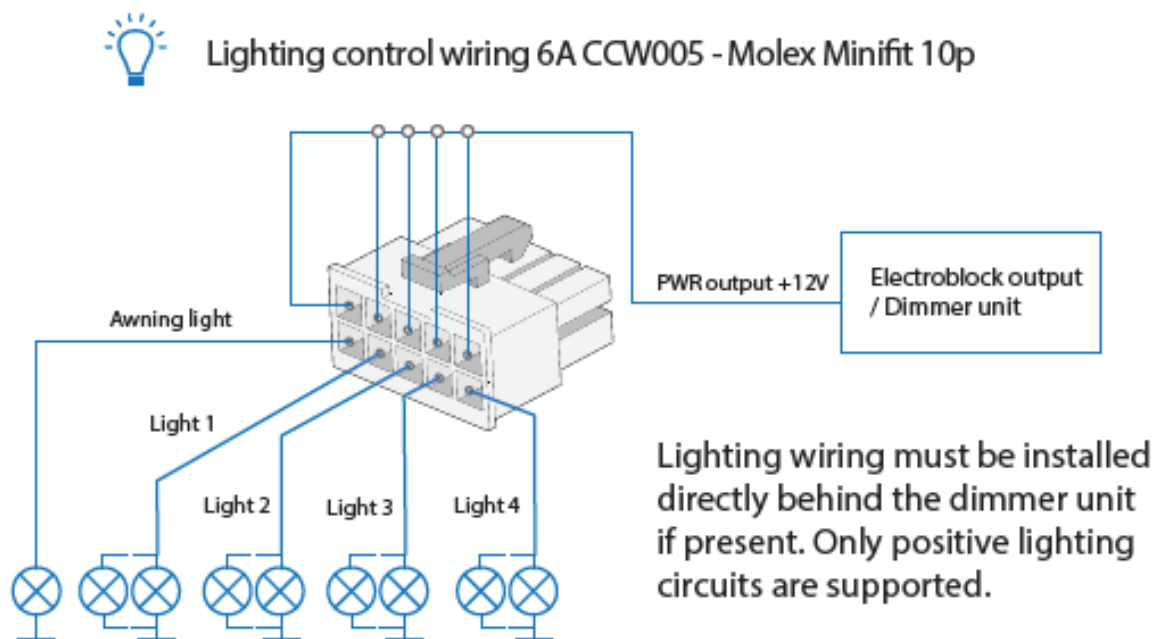
Connecting the Lighting control wiring

Choosing the circuits

We first recommend choosing which circuits you want to be controlling. Open the electroblock manual and find circuits you want to control. Note that our Lighting control wiring 6A is reserved for 5 light channels, one of which is reserved for the awning light. In this case we changed the fuses to 10 Amps or 7.5 Amps instead of 15 amps, because of the Onboard unit's dimmer current limit. This step is optional.

Connecting pins to Lighting control wiring's connector.

When you have chosen the circuits, you must insert the pins in the connector. There are a total of 5 channels on this particular wiring, one pin of the upper row is for input and one of the lower row is for output. Consult the Installation diagram to see the correct configuration.

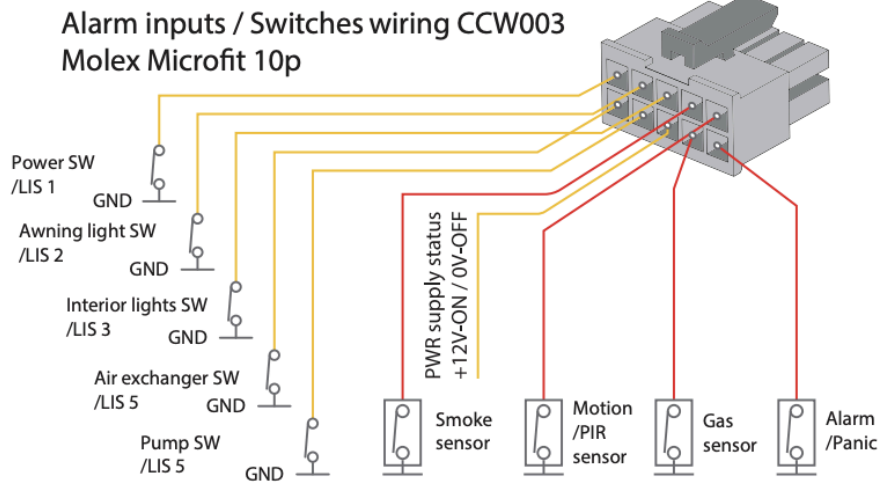


Interconnecting Lighting control wiring 6A with the original wiring

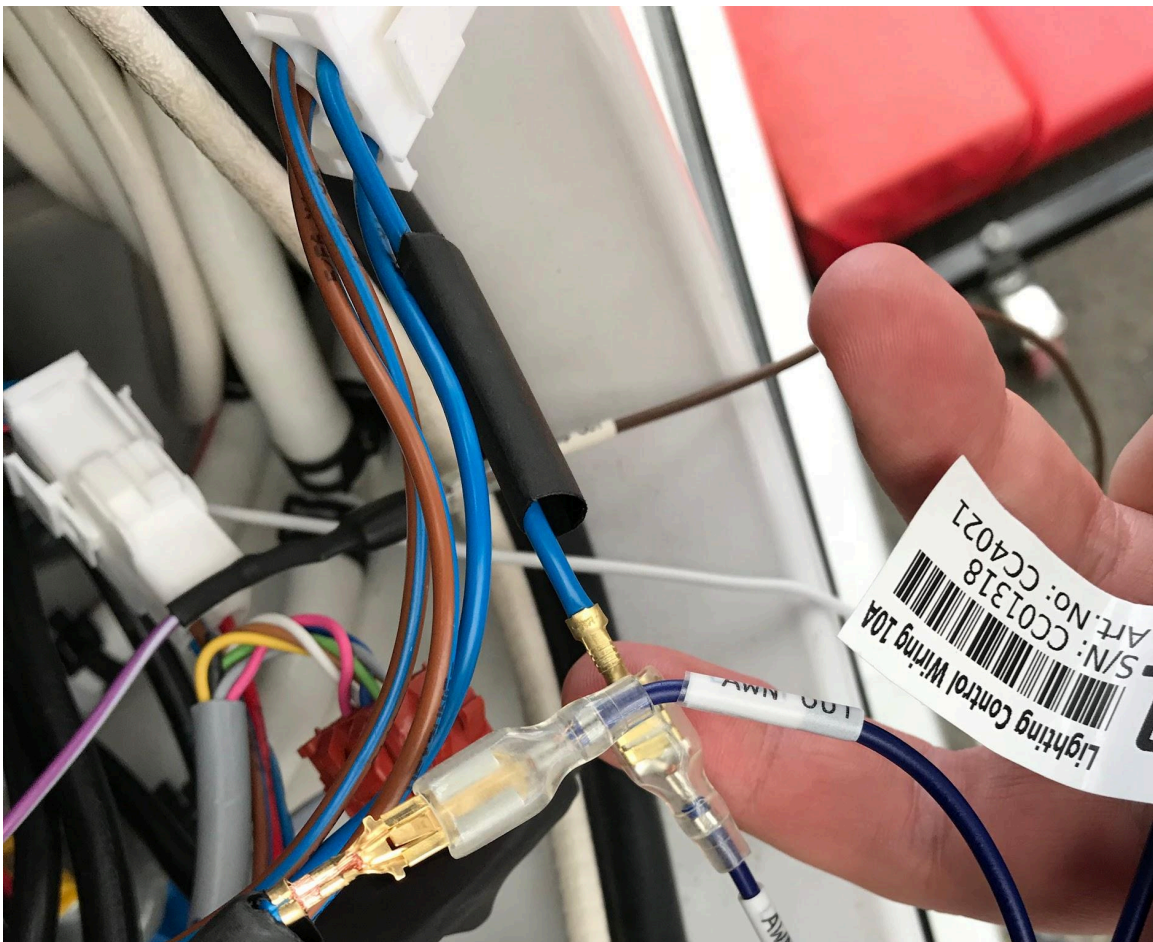
Find the wiring leading from the electroblock or dimmer unit, cut it and apply male wire connector to it or disconnect FASTON from the electroblock or dimmer unit. Then interconnect the Output and Input cables with the original wiring, as shown in the picture below. Repeat this process to as many circuits as you have available or chosen to use. If an original dimmer unit is present, connect wires always behind it, or use the CaraControl integrated dimmer instead. Be aware of the fact factory switches are connected behind CaraControl dimmer and you have to keep them switched on and leave original dimmer at maximum for the proper operation. Keep the cables as short as possible to avoid power losses.

Interconnecting lighting switches for two-way operation

The CaraControl lighting driver is capable of two-way operation together with factory fitted lighting switches. These switches must be push-button type for proper operation. By sending GND signals from these switches to the CaraControl device its internal lighting driver can be controlled. Lighting controller switches inputs LIS1-LIS5 are depicted below.

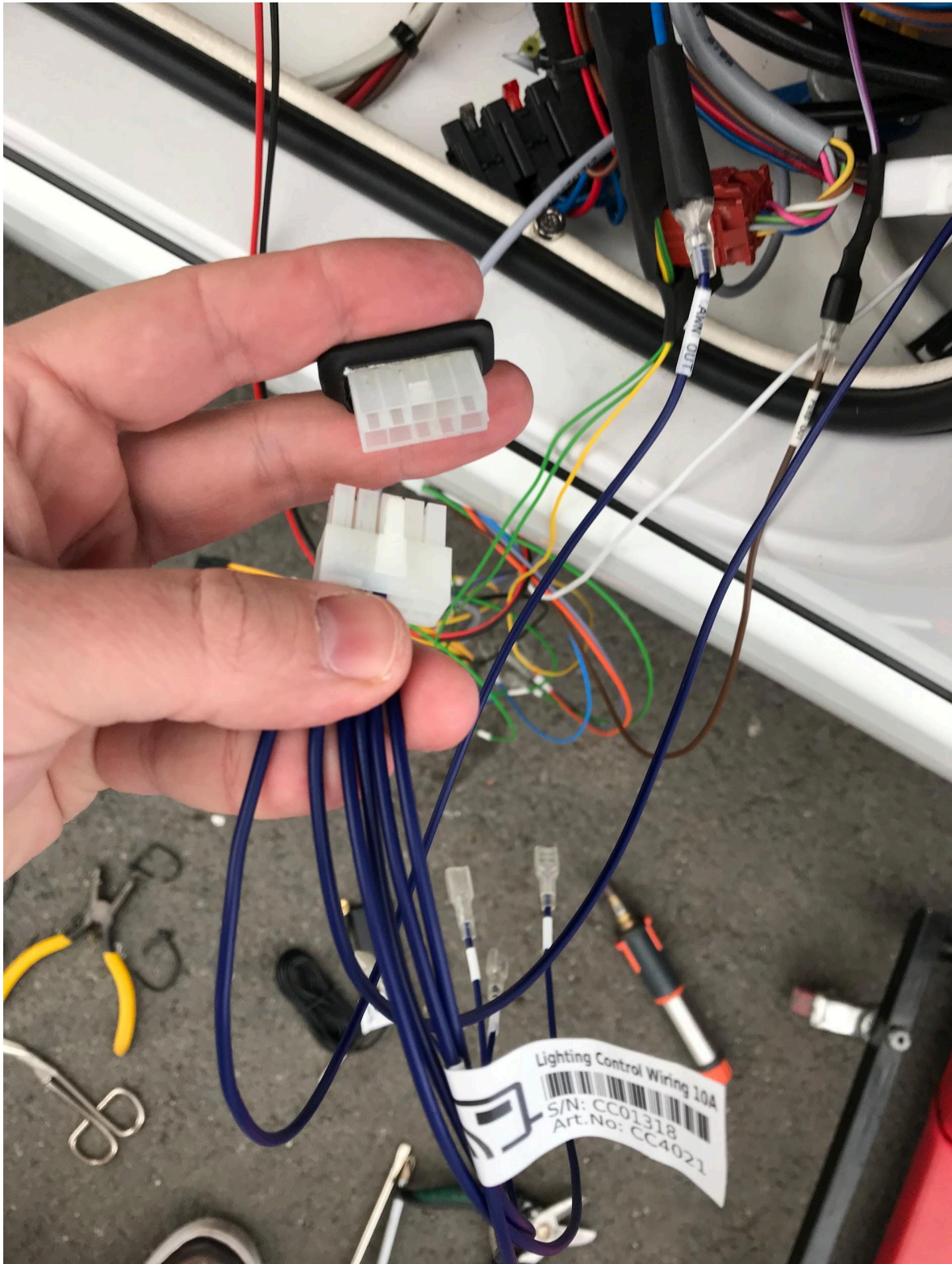


WARNING! Be careful to keep the correct polarity of the lighting circuits - positive. Some manufacturers use negative outputs of power supply for lighting channels which is incompatible with the CaraControl's lighting driver. Sometimes, the manufacturer decides to connect different appliances to lighting circuits, such as entrance step, TV, etc. In this case, do not connect it or split the circuits. You can also reconnect such appliances to concurrent circuits.



Test the lights

Take the included terminator and plug it into the Lighting wiring's Molex connector. If the lights go on, the installation is successful. If not, try switching the lights on in the leisure vehicle manually. In case of onboard unit malfunction, insert the terminator into the unit, and everything in the leisure vehicle will work as before, even with CaraControl installed.



Installing outside temperature sensor

Finding the suitable location

Lead the Temperature sensor through the floor on the bottom of the vehicle to ensure accurate outside temperature measurement as shown in the pictures below. The placement of the Temperature sensor is up to you, just make sure you place it close to the mid height of the vehicle. Avoid places such as heaters to ensure maximum accuracy.

Secure and seal the sensor in place so that it does not move around and seal the hole you drilled.



Installing the antennas

Installing LPWA Antenna

The most suitable place for the LPWA antenna is interference free area, such as a closet or wall. Avoid metallic surfaces and place the antenna in a vertical position. The higher the better.



Installing GNSS Antenna

The most suitable place for the GNSS antenna is the sky-view area, such as a window frame, cupboard etc. Avoid metallic surfaces above the antenna to ensure unshielded sky-view, in horizontal position. The arrow symbol on the front side of the antenna shows the correct orientation.



Installing ISM Antenna

The ISM foldable antenna is usually attached directly to the CaraControl unit, however the situations may occur where an external ISM antenna needs to be mounted instead. This applies to the larger vehicles or in the case the CaraControl unit is installed in the area where some metal objects, fuse box cover or wires can affect a proper signal reception. The same rules apply for installing as for LPWA antenna. Also the horizontal height difference between ISM antenna and the sensor antenna shouldn't be more than 2m.

The reason is that the RF power of wireless security sensors is set to the lowest possible level to preserve the battery life. The wireless connection of the sensors is therefore sensitive to ISM antenna placement. The rule that an antenna is the best amplifier applies in this case in full.

Check the signal strength of each of the sensors in the App and if any shows lower level than 20%, an external ISM antenna should be considered to install.

Installing the siren

First you need to find a suitable place for the siren. This is usually somewhere outside the vehicle. Then you need to interconnect the siren with the Power wiring and battery as described in the Installation Diagram.



Installing the security sensors

You need to find a suitable place for the magnet and the sensor. You can either use screws to attach the magnet, or a double-sided VHB tape. The placement is up to you. Look at the pictures below for an example. Check carefully the reading distance of the magnet placed towards the sensor to match the proper positions.

To pair the sensor with the CaraControl unit consult the user manual.

 EN Manual - CaraControl App





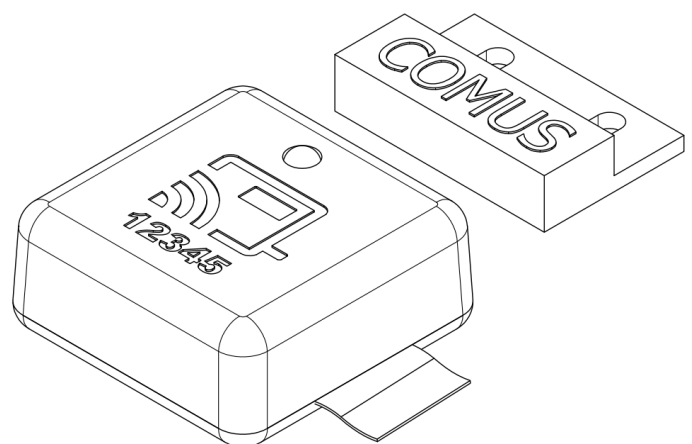


DISCLAIMER!

The security sensors are designed for indoor use only. Do not install them into areas such as the engine room. To secure the engine room, use wired sealed magnetic contact or mechanical switch and connect it to some of the alarm inputs on the CaraControl unit.

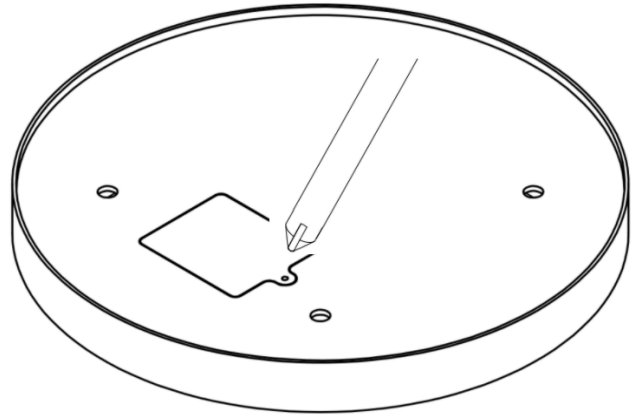
WARNING!

In the case you are using the sensor on a window, never close a blinder at the side where the sensor is attached. Adopt installation according to a blinder's closing direction.



Installing the gas measuring pad

Simply put the gas pad under the bottle, fix it using the VHB tapes on its bottom side or use suitable screws and mount the base of the gas pad onto the gas box bottom. By removing the battery isolator, pairing mode will be activated. This has to be done before you place the bottle onto the pad. Fasten bottle fixation strips adequately and tune the TARA in the CaraControl App to reach the highest accuracy of the weighing.



To pair the gas pad with the CaraControl unit consult the user manual.

 EN Manual - CaraControl App



