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Forecourt automation

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WFC wireless forecourt communicator

for petrol stations

TECHNICAL GUIDE

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REVISION HISTORY

REV	DATE	BY	SECTIONS	DESCRIPTION
R01	**2023.10.11**	Evgeniy Vasyliev	All	First release of WFC board revision
R02	**2023.12.11**	Evgeniy Vasyliev	All	Review and names correction. Changes to web interface.
R03	**2024.12.18**	Evgeniy Vasyliev	All	Review and names correction. Changes to web interface.

PURPOSE OF THE DOCUMENT

This Technical Guide is intended for studying of WFC wireless forecourt communicator for petrol stations. It contains basic information regarding its

- technical characteristics
- board interfaces and connectors
- configuration
- schemes of connection to various fuel dispensers, ATG systems, price-boards and readers

Information regarding connection to specific forecourt equipment (fuel dispensers, ATG systems, price-boards and readers) and correspondent configuration of WFC communicator can be received upon request to Technotrade LLC company.

Due to a reason that the WFC communicator's firmware is constantly being developed in direction of improvement of its possibilities, changes are possible in final version, which are not described in given Technical Guide.

During the system development process given Technical Guide is also expanded and updated and new chapters are added. The latest version of this Technical Guide can be downloaded from the WFC communicator web-page: *https://www.technotrade.ua/wireless-forecourt-communicator*.

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In case if you find any mistakes, omissions in this document or have any suggestions on improvements to this document, please feel free to e-mail them to our support mailbox: *support@technotrade.ua*. We will be grateful to you for this valuable information.

All technical questions regarding the WFC communicator are welcome to be asked on support mailbox: *support@technotrade.ua*. Our support team will be glad to help you.

Also, you can call to us or visit us on:

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Mail: *mail@technotrade.ua*

FCC STATEMENT

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20
cm between the radiator and your body.

APPOINTMENT

WFC wireless forecourt communicator allows communication with any brand of dispensers (fuel, LPG, CNG), tank probes and consoles, price poles in a wireless way without a need to put any cables.

WFC has a rich set of electric interfaces on board (various types of current loop interfaces, voltage driven interfaces, RS-485, RS-422, RS-232) suiting to connection of any dispenser brand. WFC has auxiliary ports for connection of RFID readers installed on dispensers.

Communication with WFC is done over a secured Wi-Fi network (2,4 GHz).

The WFC communicator works in conjunction with the *PTS-2 forecourt controller*, where the WFC communicator provides wireless communication and connection to devices using various hardware interfaces and the PTS-2 controller manages communication with the connected devices (dispensers, ATG consoles and probes, price poles, readers and AVI systems). Detailed information on the PTS-2 forecourt controller can be found in its technical guide found on *https://www.technotrade.ua/View/DownloadFile?fileName=PTS-2-forecourt-controller-technical-guide.pdf*.

Wireless communication is done within a secured Wi-Fi network (2.4 GHz), which is managed by a separate Wi-Fi router.

Besides the wireless communication the WFC communicator is also able to work in a wired mode, in which the WFC serves as a universal interface converter for dispensers able to convert from input RS-232 or RS-485 interfaces in many other output interfaces:

- 2-wire current loop interface
- 3-wire current loop interface
- 4-wire current loop interface
- 2-wire voltage driven interface

Dimensions of the WFC communicator board are extremely small with a size of a credit card, which makes its suitable for installation inside any third-party hardware.

TECHNICAL CHARACTERISTICS

General specification

##	PARAMETER	VALUE
1	**Power supply voltage**	12 V DC
2	**Maximal current consumption**	1 A max
3	**Temperature range**	-40°C … +60°C
4	**Weight**	200 g
5	**Overall dimensions**	85 x 58 x 30 mm
6	**Wi-Fi range**	2.4 GHz

WFC communicator is using ESP32-WROOM-32UE-N4 MCU inside, which allows communication over 2.4 GHz Wi-Fi network. Information on its technical characteristics, certificates and permissions are given in its technical guide, which is available for download from the following link: *https://espressif.com/documentation/esp32-wroom-32e_esp32-wroom-32ue_datasheet_en.pdf*.

COMMUNIATION PORTS

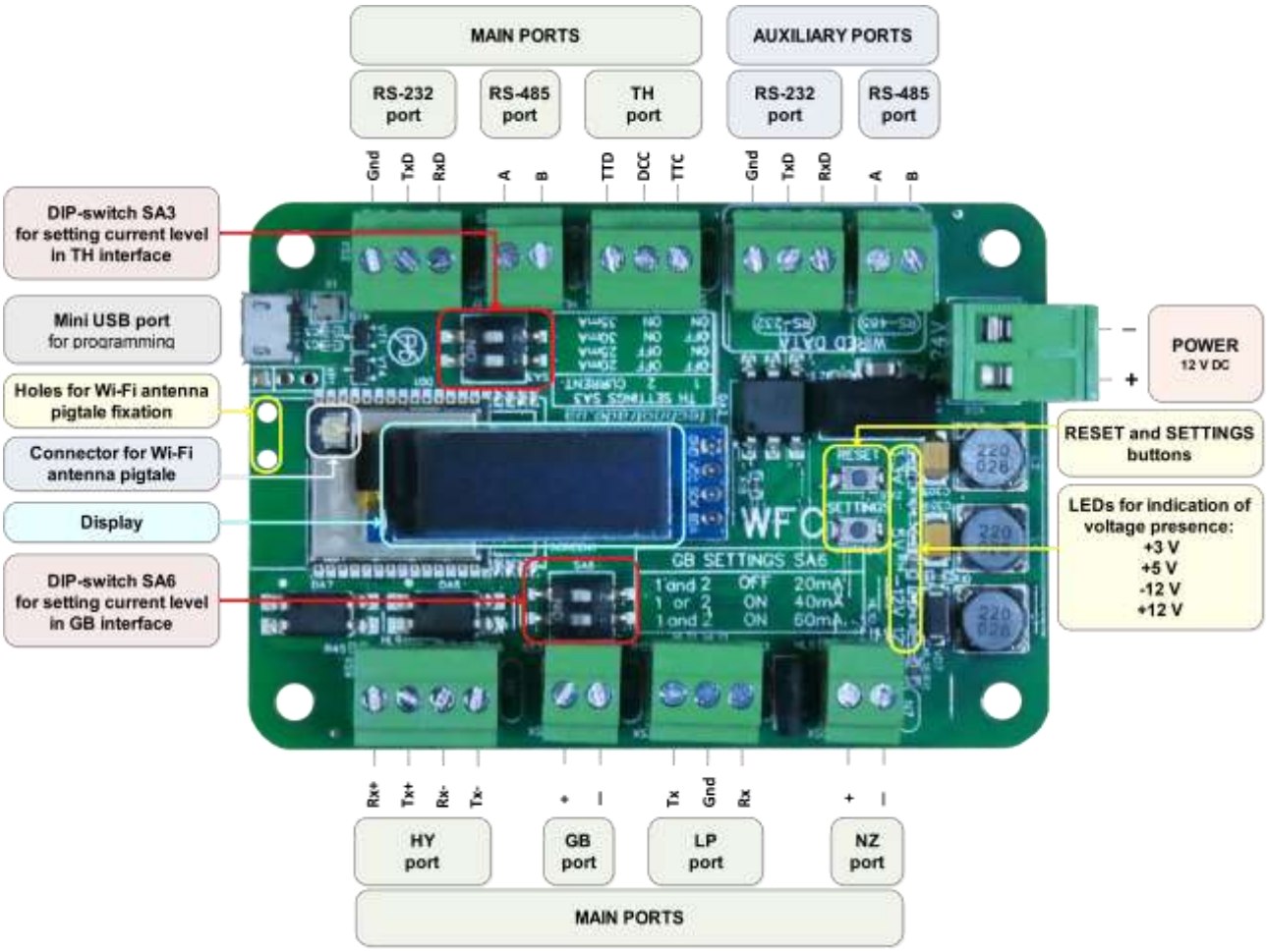
PORT NAME		INTERFACE TYPE	APPOINTMENT
MAIN PORTS	GB	**2-wire current loop interface**	**Connection of dispensers using 2-wire current loop interface**, for example 2A, AG Walker, ANGI International, Baransay, Batchen, Bennett, CFT Clean Fuel, Compac, EuroPump, Falcon, Fuelsis, Galileo, Gilbarco, Greenfield, Kalvacha, Kraus, Maser, Meksan, Mekser, PEC (Gallagher Fuel Systems), Petposan, Petrotec, Prowalco, Pump Control, Salzkotten, Tankanlagen Salzkotten, Wayne Dresser (USCL communication protocol), Wertco, Yenen, others
	TH	**3-wire current loop interface**	**Connection to dispensers using 3-wire current loop interface**, for example Tokheim, Satam, Emgaz Dragon, Kalvacha, Kraus, others
	LP	**3-wire current loop interface**	**Connection to dispensers using 3-wire current loop interface**, for example Logitron, Emgaz Dragon, Gilbarco Marconi, Fornovo LPG, Vanzetti, others
	HY	**4-wire current loop interface**	**Connection to dispensers using 4-wire current loop interface**, for example HongYang, Star, others
	NZ	**2-wire voltage driven interface**	**Connection to dispensers using 2-wire voltage driven interface**, for example Actronic, Agira, Batchen, Compac, Intermech, PEC (Gallagher Fuel Systems), others
	RS-485	**RS-485 interface (2 wires: line A, line B)**	**Connection to dispensers and register meters using RS-485 interface**, for example 2A, Adast, Astron, Bailong, BlueSky, Censtar, Changlong, Coptron, Coritec, Datian Machines, DEM G. Spyrides, Develco, DINT, DongHwa Prime, Durulsan, Eaglestar, Ecotec, EKOSIS, EPCO, EuroPump, Fuelsis, Furen HighTech, Hitaci, IPT, Korea EnE, Kwangshin, Lanfeng, Liquid Controls, Meksan, Mepsan, Midco, Mithra Fueling, MM Petro, MRT, MsGas, Neotec, ORCA, PetroMeccanica, RealTech, Safe, Sanki, Shelf, Shibata, Tatsuno, Tattan, Tiger, Tokico, Tominaga, TrueTech, Wayne Dresser, Welldone, Zcheng, others. **Connection of price poles, readers and AVI systems.**
	RS-232	**RS-232 interface (3 wires: TxD, RxD, Gnd)**	**Connection to dispensers and register meters using RS-232 interface interface**, for example Gilbarco EMR, Lanfeng, Total Control Systems, others. **Connection of price poles, readers and AVI systems.**
AUXILIARY PORTS	RS-485	**RS-485 interface (2 wires: line A, line B)**	1. **Connection of readers installed on dispensers** **2. Wired connection to WFC communicator from the management system**
	RS-232	**RS-232 interface (3 wires: TxD, RxD, Gnd)**	

NOTE! It is strictly prohibited to connect any of the cables' shields to ports of WFC communicator.

Manufacturer reserves a right to bring in modifications in construction of controller for improving of its technical and functional characteristics, so supplied version of controller may differ from described in given technical guide.

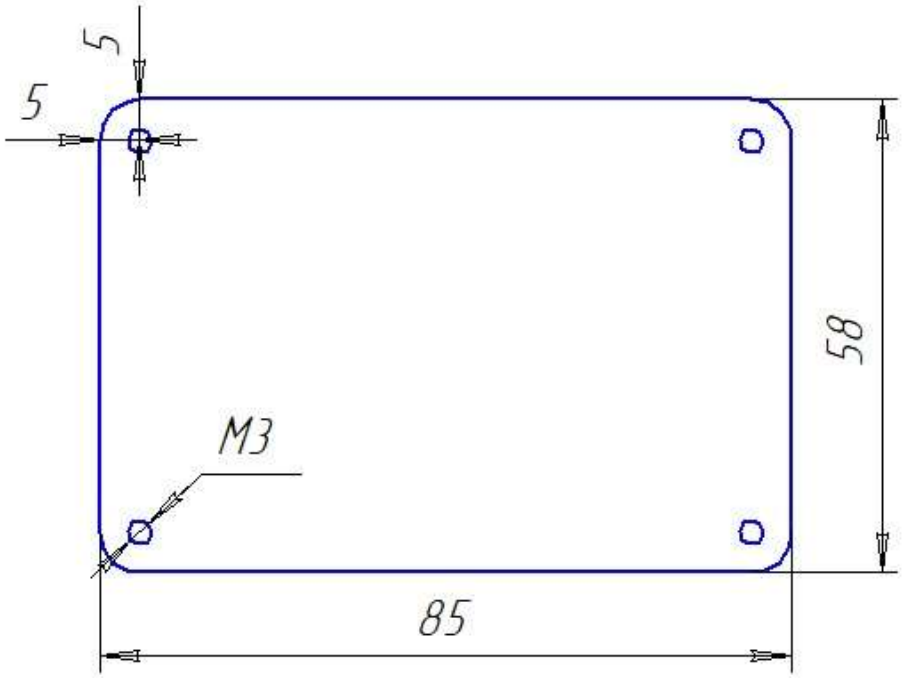
WARNING! This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

BOARD CONNECTORS, INTERFACES AND DIMENSIONS



WFC communicator is supplied together with terminal blocks for each of the connectors for screwing of connection wires. Also, the complete set contains an external antenna and a pigtale connector for antenna connection.

Overall dimensions of the WFC communicator board:



WFC communicator has 2 buttons:

1. **SETTINGS button** has 2 appointments:
   - If you click it shortly during operation – then you can scroll between different “screens” on the display showing information on the present operation of the WFC:
     - presently used Wi-Fi network, assigned IP-address, network mask and gateway
     - network MAC address
     - serial number of WFC
     - used Wi-Fi channel
     - Wi-Fi signal level
     - used mode of WFC operation
     - used port number for communication
     - counters of packets exchange on main ports and auxiliary ports (number of packets received and transmitted)
     - presently used firmware version
     - information on manufacture (Technotrade LLC company)
   - If you constantly press the SETTNGS button for more than 10 seconds – then it will lead to erase of present settings in WFC and restoring to factory default values
   - If you quickly click SETTINGS button twice – then it will stop connection to local Wi-Fi network and will create its own Wi-Fi access point for a possibility to correct configurations. It is important in case if the WFC fails to connect to local Wi-Fi network due to some configuration was not set correctly in WFC. By defaults, this is a Wi-Fi network with name WFC_xxxx, where xxxx – are last 2 bytes of the MAC-address of WFC. In this network the WFC starts a web-server with IP-address 192.168.4.1 on port 80. Password to connect to this default network is 12345678.
2. **RESET button**, clicking on it leads to restart of the WFC operation

Display of WFC is used to display all information on the WFC operation, which is grouped to a number of “screens”, switching between which is done by clicking the SETTINGS button. Information is shown on the display during 5 seconds after clicking the SETTINGS button, after that the display is turned off, so in order to show it .

DIP-switch SA6 is used for selection of the current level in GB interface due to different brands of dispensers might require different current level in the 2-wire current loop interface. Possible values of the current level depending on the SA6 DIP-switch positions are the following:

- DIP-1 switch OFF and DIP-2 switch OFF – 20 mA
- DIP-1 switch ON and DIP-2 switch OFF – 40 mA
- DIP-1 switch OFF and DIP-2 switch ON – 40 mA
- DIP-1 switch ON and DIP-2 switch ON – 60 mA

DIP-switch SA3 is used for selection of the current level in TH interface due to different brands of dispensers might require different current level in the 3-wire current loop interface. Possible values of the current level depending on the SA3 DIP-switch positions are the following:

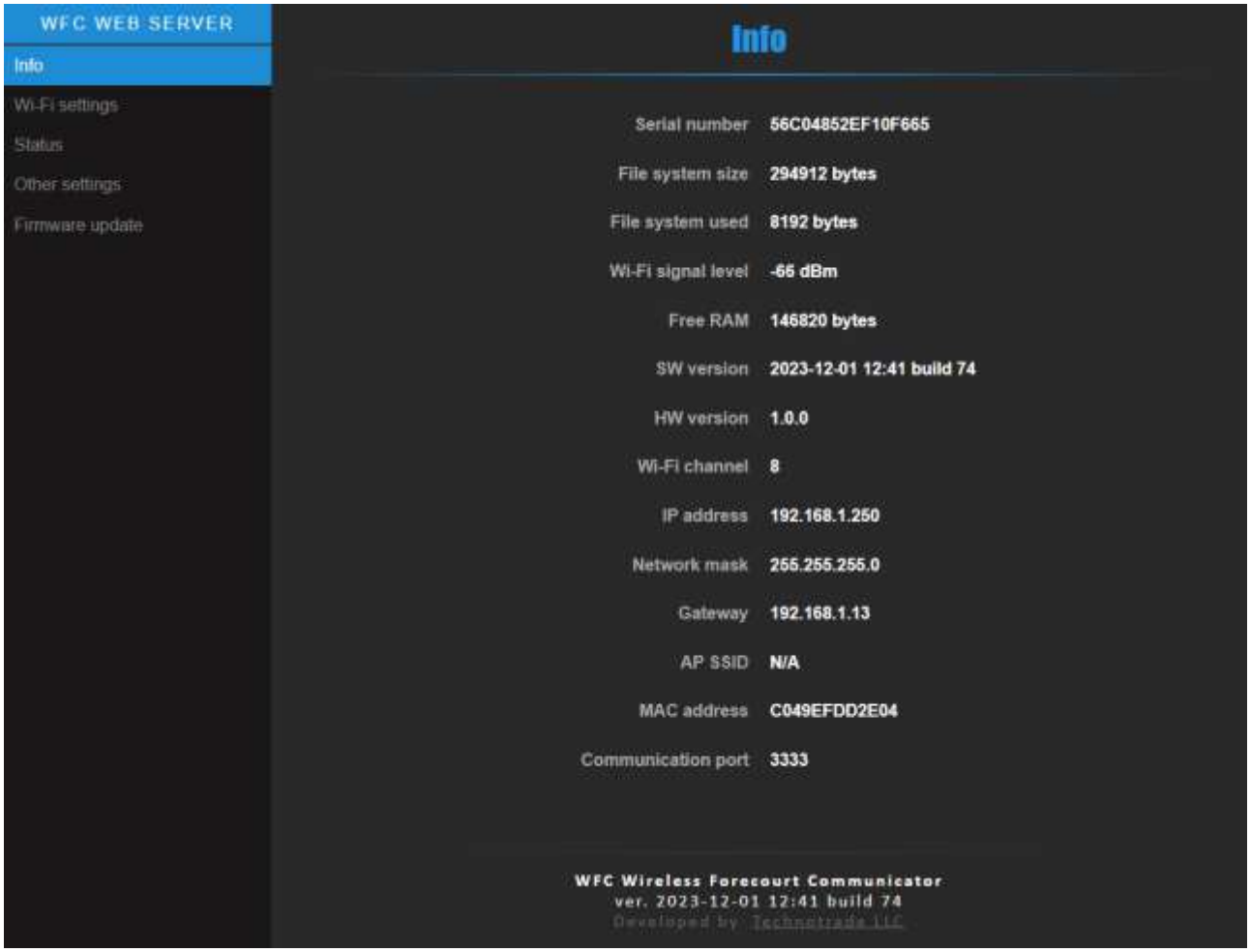
- DIP-1 switch OFF and DIP-2 switch OFF – 20 mA
- DIP-1 switch ON and DIP-2 switch OFF – 25 mA
- DIP-1 switch OFF and DIP-2 switch ON – 30 mA
- DIP-1 switch ON and DIP-2 switch ON – 35 mA

STARTUP AND CONNECTION

When the WFC communicator starts after the power supply is provided then it loads the configuration it already has and tries to connect to the Wi-Fi network configured in it. WFC communicator can be configured to use a static IP-address or can be configured to use DHCP (meaning it is automatically assigned a free IP-address present within the connected Wi-Fi network by the router). The applied IP-address is possible to check on the display of the WFC by clicking once the SETTINGS button on its board or in the web server of the WFC communicator.

In case if there is a need to reconfigure the WFC and there is no access to preconfigured network – then it is possible to reset the WFC to factory settings by clicking and holding the SETTINGS button for at least 10 seconds during its operation. After restoring the WFC will create its own Wi-Fi network with the name "*WFC server XXXX*" (where *XXXX* are last 4 digits of the MAC-address of WFC), default password to this network is *12345678*, so it is possible to connect to this network, access the web-server of the WFC communicator and reconfigure it to the needed Wi-Fi network.

For initial configuration of the WFC communicator you need to connect to the network created by the WFC communicator. After that access to the WFC web server for its configuration can be done in any modern web-browser. After entering the IP-address of the WFC communicator in the web browser the user will see the following page, which shows general information on the WFC communicator:

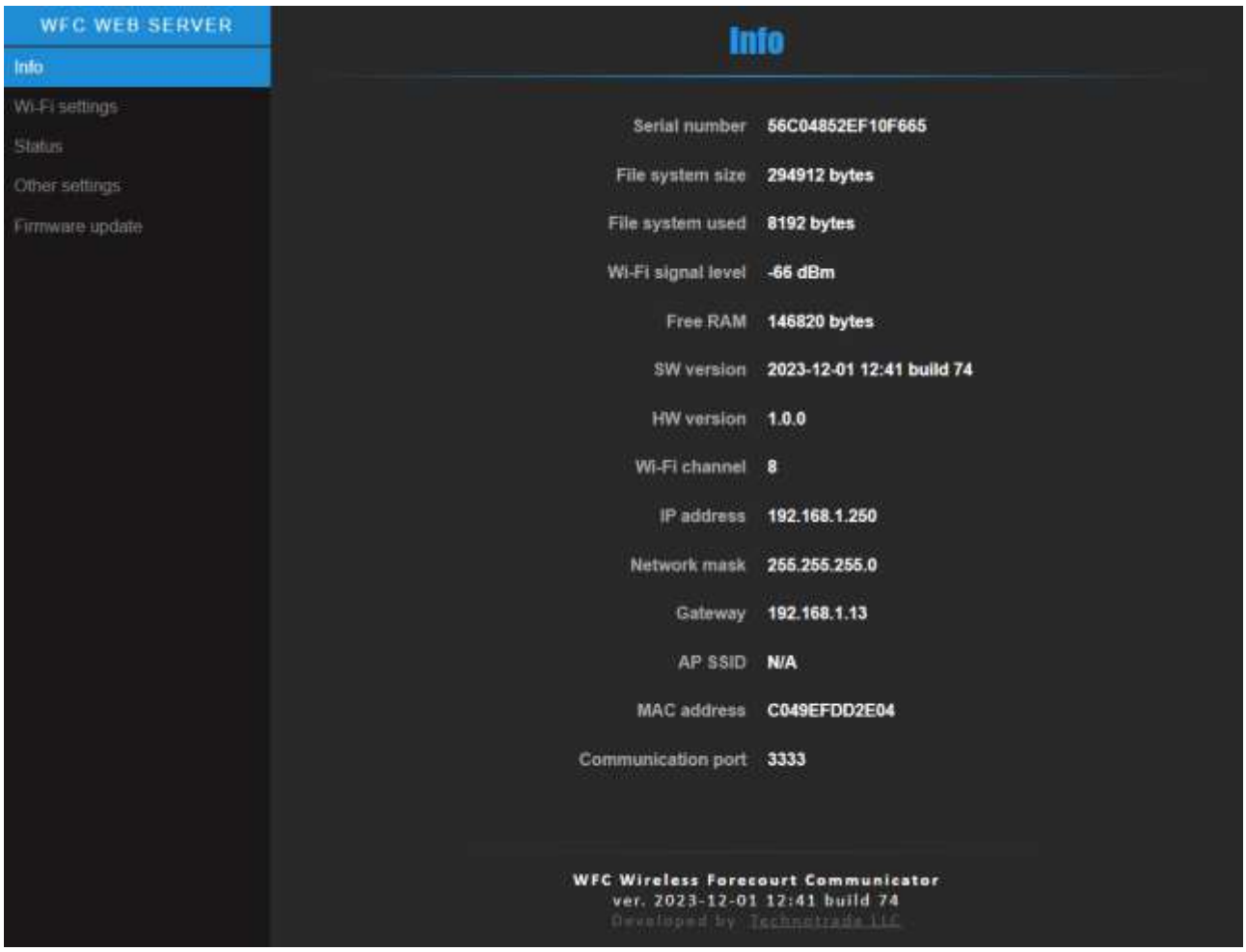


CONFIGURATION WEB SERVER

Info page

Info page shows general information on the WFC communicator including its:

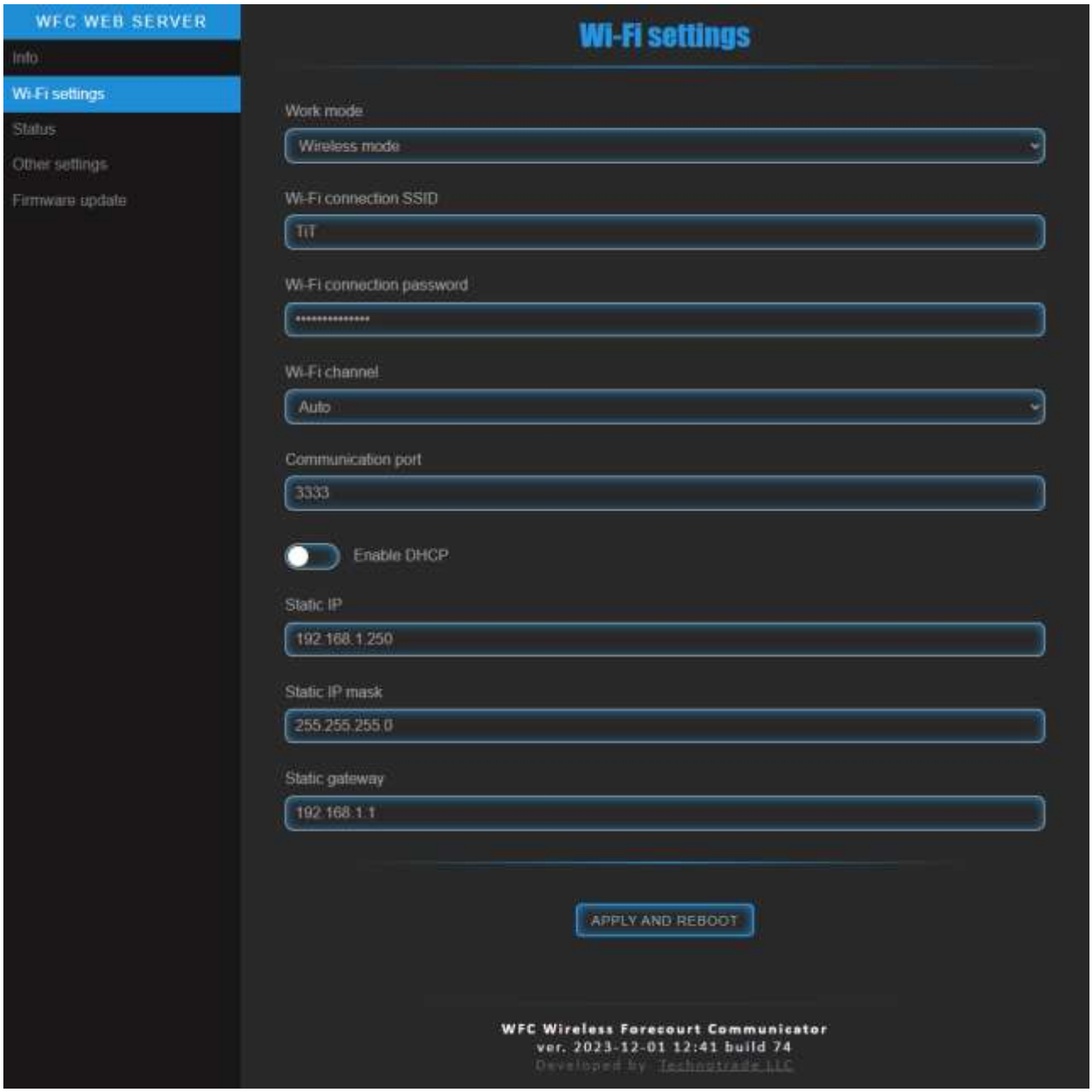
- presently used Wi-Fi network, assigned IP-address, network mask and gateway
- network MAC address
- serial number of WFC
- used Wi-Fi channel
- Wi-Fi signal level
- used mode of WFC operation
- used port number for communication
- software and firmware versions of WFC
- other system settings and present values



Wi-Fi settings page

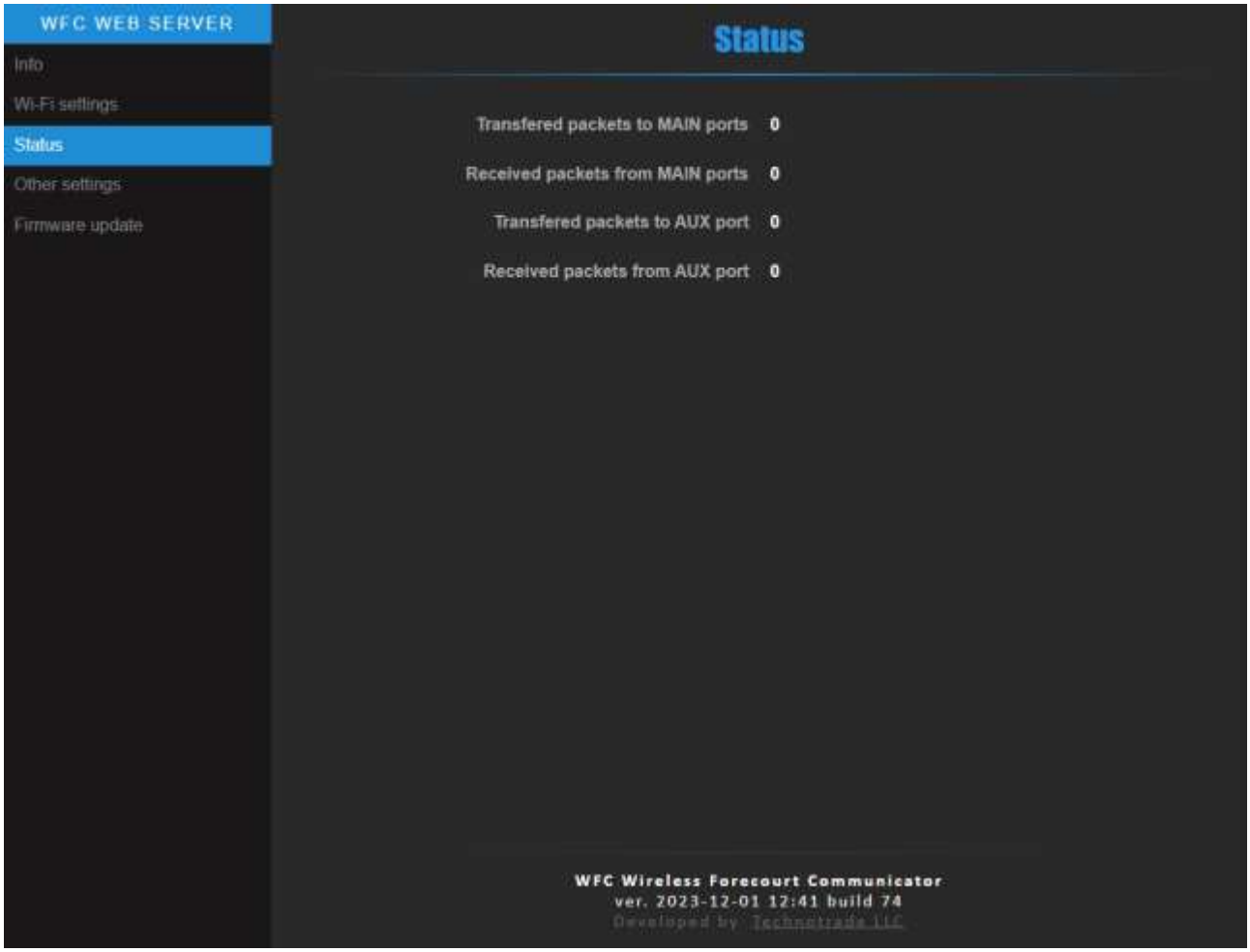
Wi-Fi settings page is used for setting of main configuration of the WFC operation:

- used mode of operation – there are 3 main modes of the WFC communicator operation:
  - wireless mode – communication with the PTS-2 controller is done in a wireless way over Wi-Fi network
  - wired mode – communication with the PTS-2 controller is done in a wired way over RS-485 or RS-232 interfaces
  - test mode – is used for testing of the WFC after manufacture and during exploitation
- Wi-Fi network credentials for connection
- Wi-Fi channel to use
- port to use for communication with the PTS-2 controller
- settings for static IP-address or selection of automatic IP-address assigning using DHCP



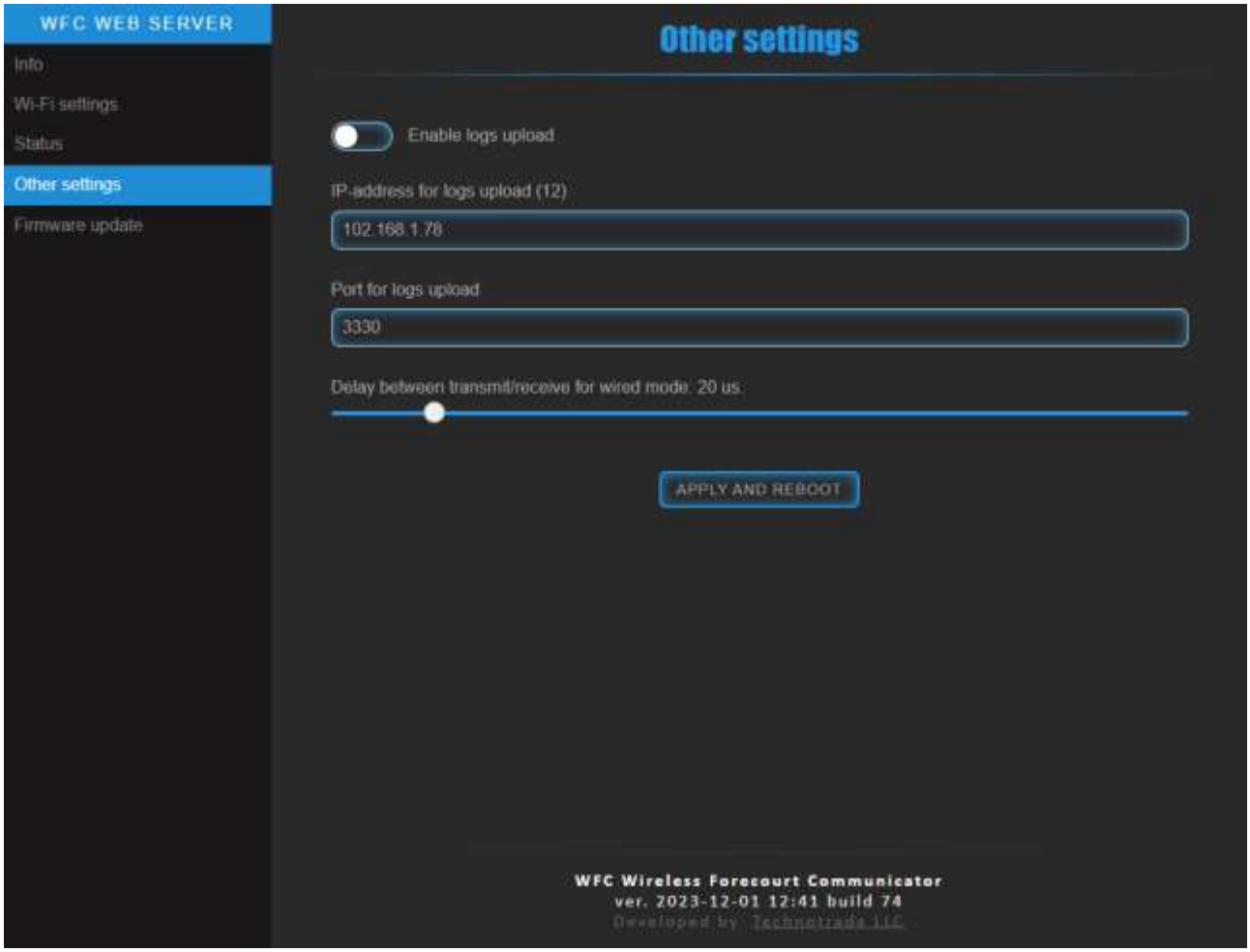
Status page

Status page is used to review statistics on exchanged packets to main and auxiliary ports.



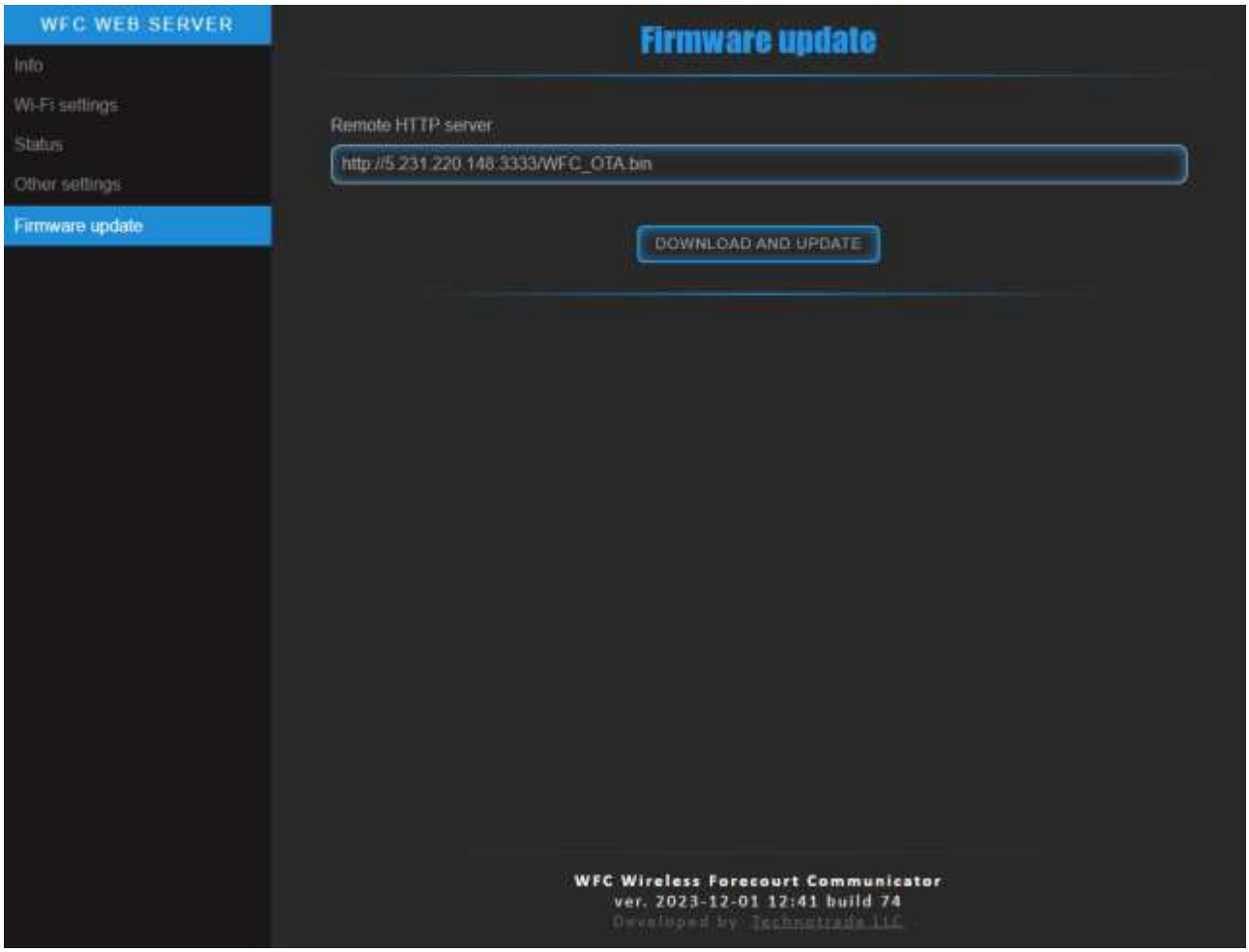
Other settings page

Other settings page is used for setting the logs upload.



Firmware update page

Firmware update page is used for setting the IP-address for download and installing a new firmware for WFC communicator.

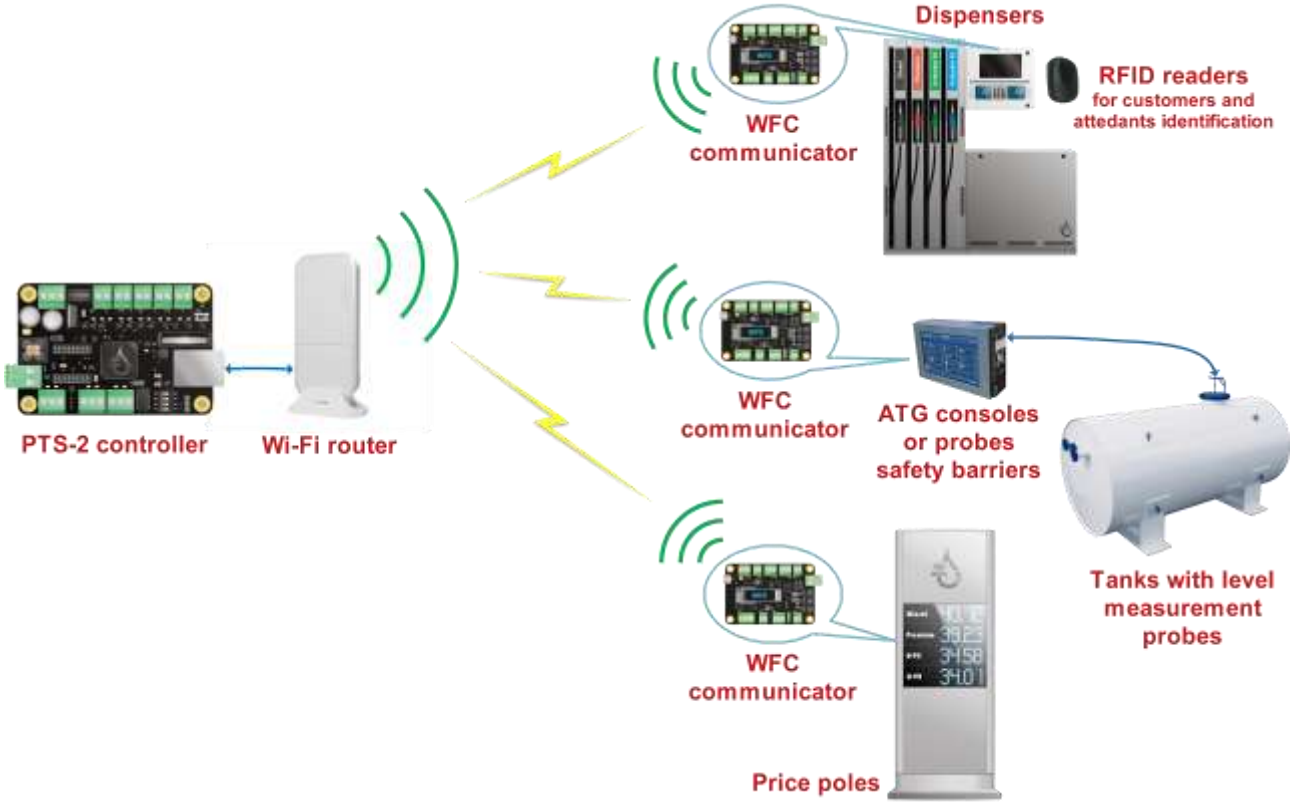


Note! Address ***http://5.231.220.148:3333/WFC_OTA.bin*** is a universal address for upload of the WFC communicator firmware. This is a special address, where Technotrade LLC stores the latest firmware for the WFC communicator.

COMMUNICATION TO PTS-2 CONTROLLER

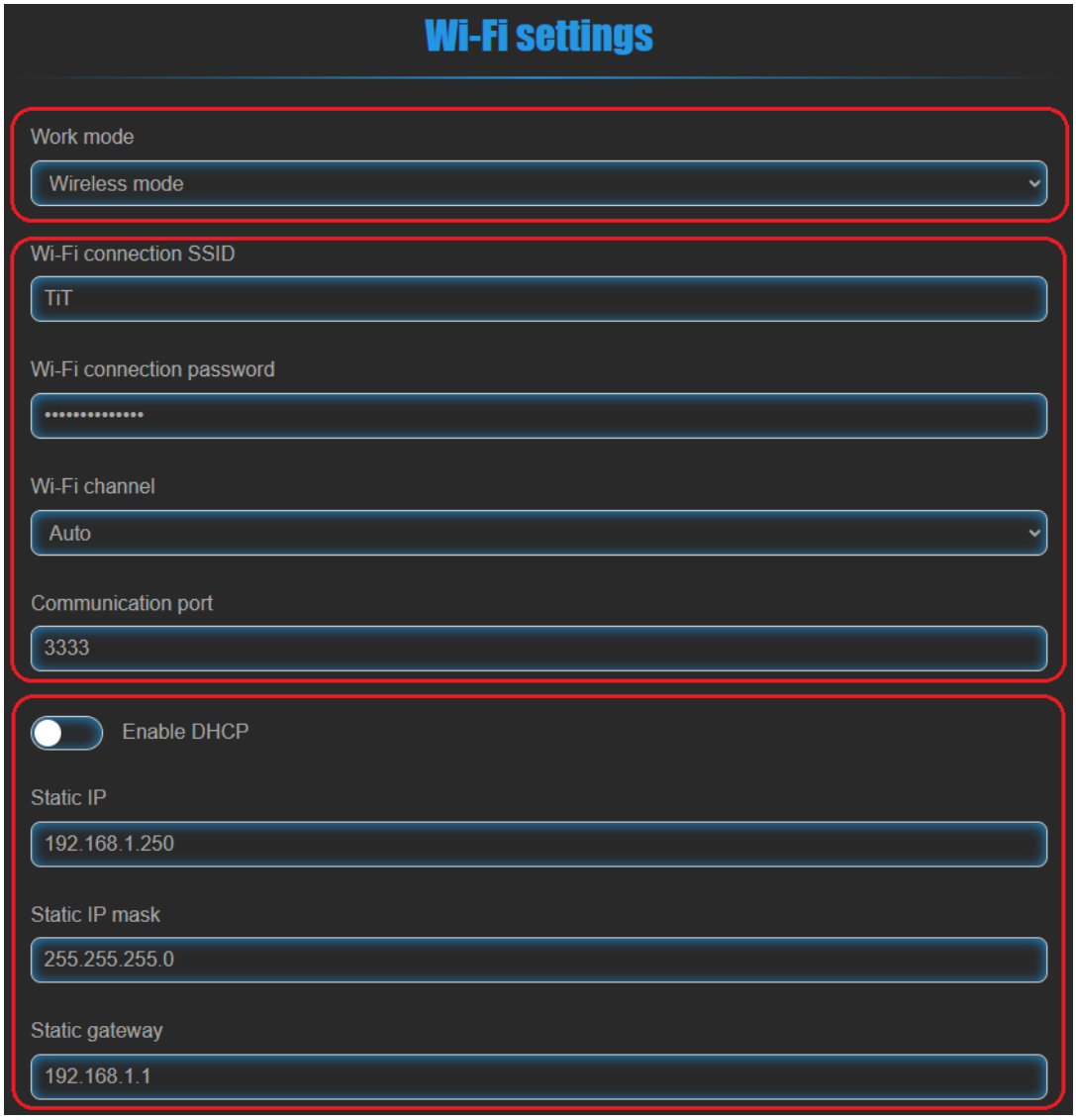
Wireless communication

In order to use wireless communication between the PTS-2 controller and the WFC communicators the first thing you need to do is to unite both the PTS-2 controller and the WFC communicators to use the same network, which is established by a separate secured Wi-Fi router.



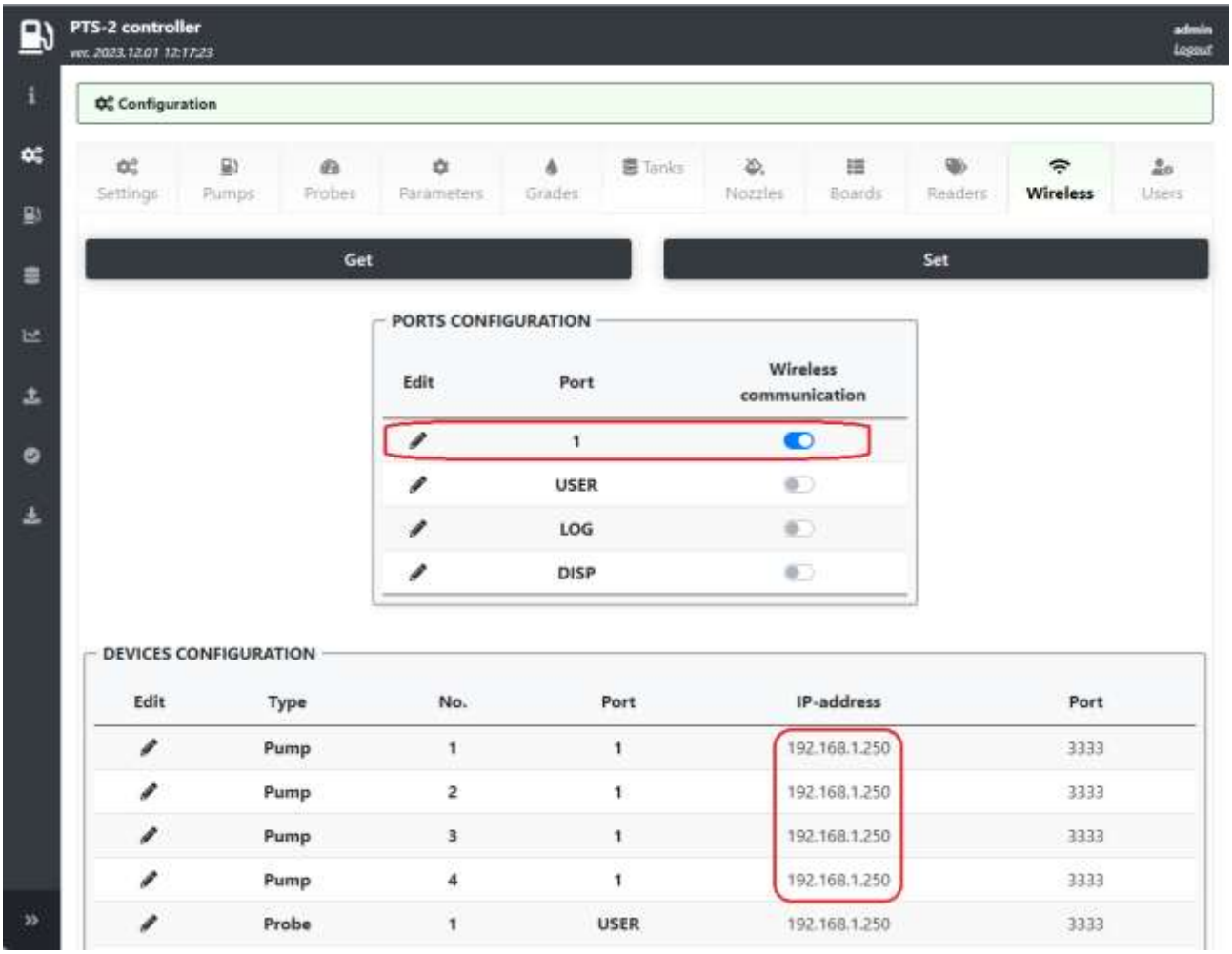
At this you can locate a separate WFC communicator for each of the forecourt devices you need to communicate with. Or you can unite several such devices to use the same single WFC communicator if the used communication interface allows it, for example if these devices are using the RS-485 interface and the same communication protocol.

After this you need to configure each WFC communicator to use *Wireless* mode of operation and to use the same Wi-Fi network established by the applied Wi-Fi router. These configurations are done on the *Wi-Fi settings* page in WFC communicator web server:



The PTS-2 controller has to be also connected to the same Wi-Fi router in a wired way (Ethernet port) and configured on the *Configuration* page > *Wireless* tab, where you should configure which of the ports has to work in a wireless way and to set the IP-address and port for each of the WFC communicators working on these ports, configuration of the PTS-2 controller is explained in its technical guide found on *https://www.technotrade.ua/View/DownloadFile?fileName=PTS-2-forecourt-controller-technical-guide.pdf*:

Note! Operation of the WFC communicator in the wireless mode depends on the Wi-Fi router. Any interruption of the Wi-Fi router operation will lead to absence of communication between the PTS-2 controller and the connected equipment (pumps, readers, others), which could potentially lead to any possible problems. Owners of WFC communicator should provide uninterruptible operation of the Wi-Fi router and prevent any access to it by any unauthorized personnel. Manufacturer does not bear any responsibility for the Wi-Fi router or network operation or problems, which can arise out of it.

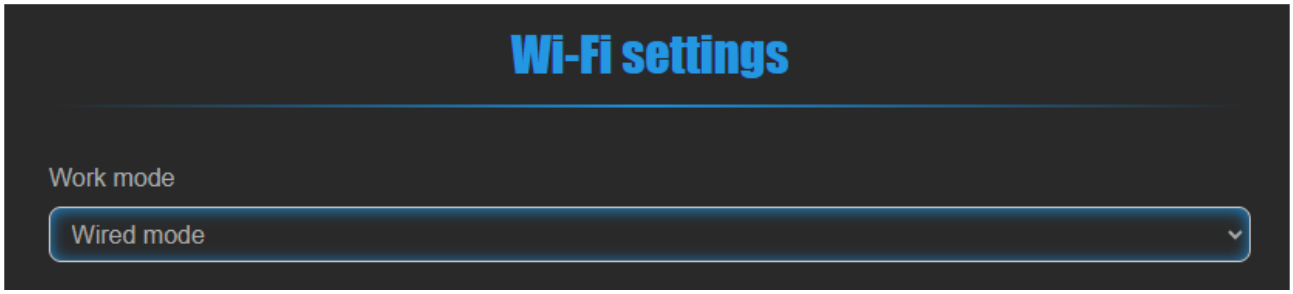

PTS-2 controller
admin
Logout
Configuration
Settings
Pumps
Probes
Parameters
Grades
Tanks
Nozzles
Boards
Readers
Wireless
Users
Get
Set
PORTS CONFIGURATION
Edit
Port
Wireless communication
1
USER
LOG
DISP
DEVICES CONFIGURATION
Edit
Type
No.
Port
IP-address
Port
Pump 1 1 192.168.1.250 3333
Pump 2 1 192.168.1.250 3333
Pump 3 1 192.168.1.250 3333
Pump 4 1 192.168.1.250 3333
Probe 1 USER 192.168.1.250 3333

Wired communication

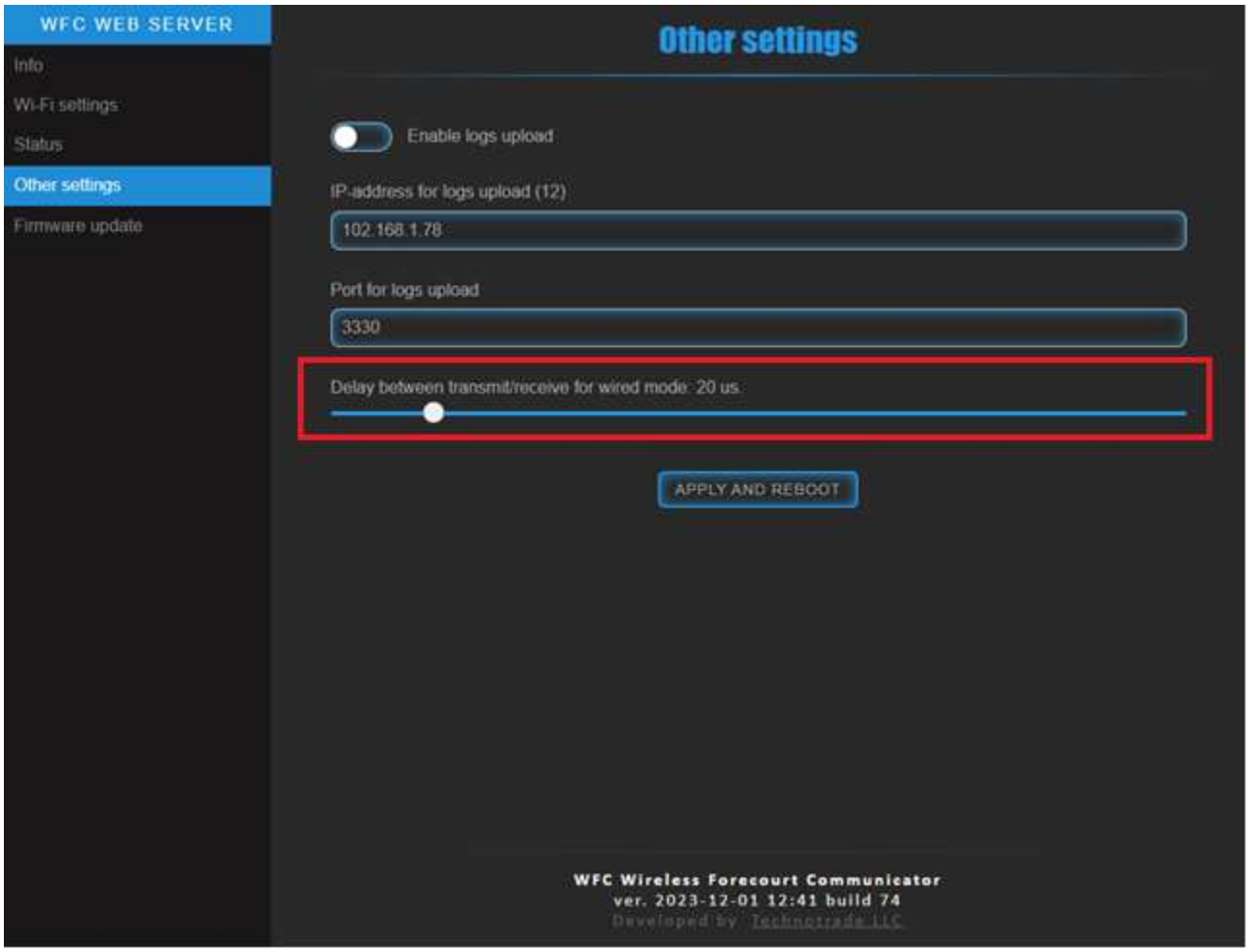
At wired communication the PTS-2 controller can connect directly to the WFC communicator, the WFC in this mode serves as a universal interface converter able to convert from input RS-232 or RS-485 interfaces to many other output interfaces:

- 2-wire current loop interface
- 3-wire current loop interface
- 4-wire current loop interface
- 2-wire voltage driven interface

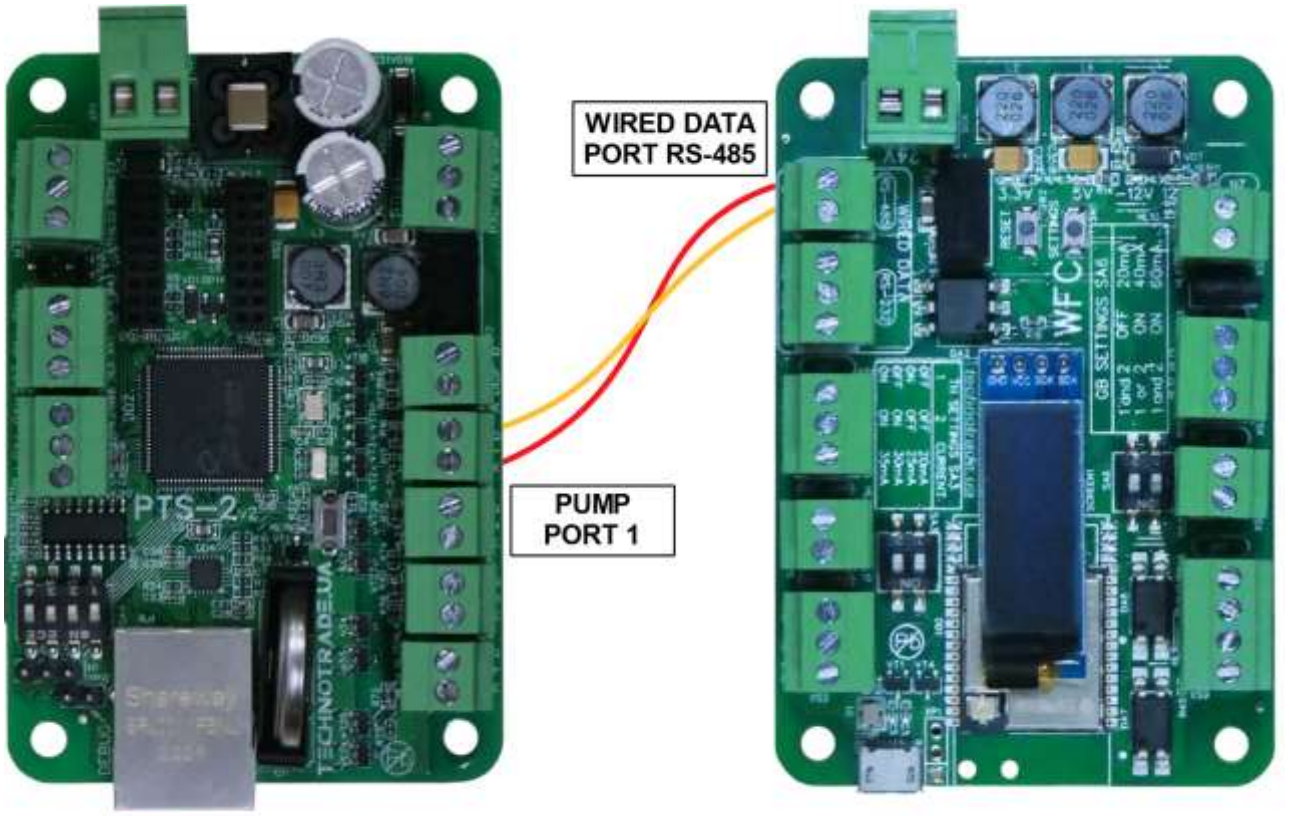
In configuration of the WFC communicator you need to set the Wired operation mode:



Also, on *Other settings* page it is possible to configure the delay between the transmit and receive messages. It is important to decrease the value here in case if communication is not good.



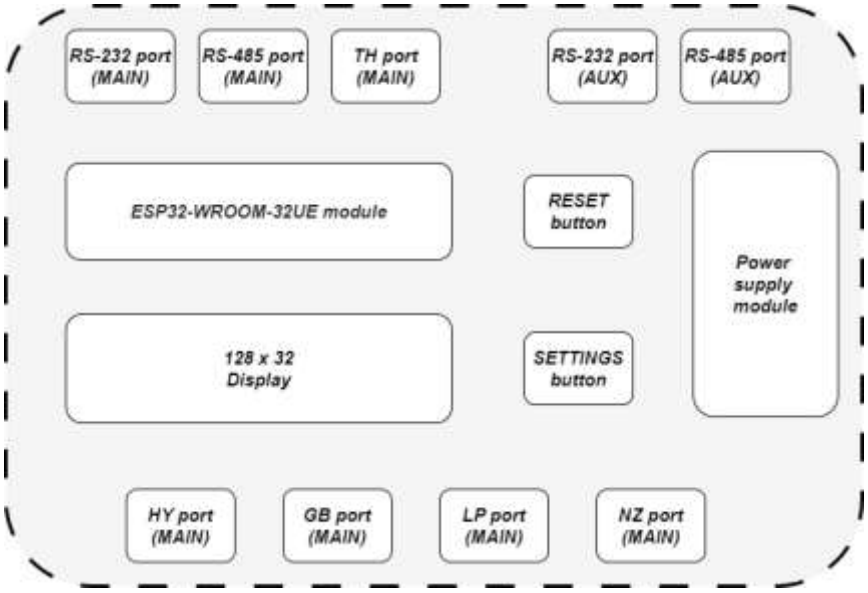
Connection of the PTS-2 controller to the WFC communicator is done in a wired way using RS-485 interface:



Configuration of the PTS-2 controller is explained in its technical guide found on *https://www.technotrade.ua/View/DownloadFile?fileName=PTS-2-forecourt-controller-technical-guide.pdf*.

BLOCK DIAGRAM AND OPERATION PRINCIPLE

Block diagram



Power on

At power on the WFC reads its settings from non-volatile memory to detect the mode of operation. There are 3 possible modes of operation:

- wireless mode – communication with the PTS-2 controller is done in a wireless way over Wi-Fi network
- wired mode – communication with the PTS-2 controller is done in a wired way over RS-485 or RS-232 interfaces
- test mode – is used for testing of the WFC after manufacture and during exploitation

Wired mode

WFC creates an access point for a possibility to change the mode. By defaults, this is a Wi-Fi network with name WFC_xxxx, where xxxx – are last 2 bytes of the MAC-address of WFC. In this network the WFC starts a web-server with IP-address 192.168.4.1 on port 80. Password to connect to this default network is 12345678.

Operation of this mode does not depend on the used communication protocol of the connected devices. WFC all the time transmits state of the input port (any AUX port) to state of output port (any MAIN port) and backwards, thus it allows to establish communication between 2 devices, connected to 2 different ports and having different types of interfaces.

Wireless mode

In this mode the WFC communicator allows the PTS-2 forecourt controller to work with the connected devices in a wireless way. In this mode the WFC connects to a configured Wi-Fi network by its access point SSID name and password, which are configured in its settings. IP-address of the WFC can be configured statically or can be received from the Wi-Fi router dynamically on DHCP protocol.

After a successful reception of the IP-address the WFC creates a web server on port 80 for configuration and also opens ports for communication to the PTS-2 forecourt controller. In case if the WFC fails to connect to the Wi-Fi network, which parameters are configured in WFC settings, then double click on SETTINGS button will lead to cancellation of connection to given Wi-Fi network and it will create its own access point the same way as in the wired mode, so it is possible to enter the WFC web server and change parameters for connection to the Wi-Fi network. Long pressing on SETTINGS button leads to reset of WFC configurations to factory settings.

Test mode

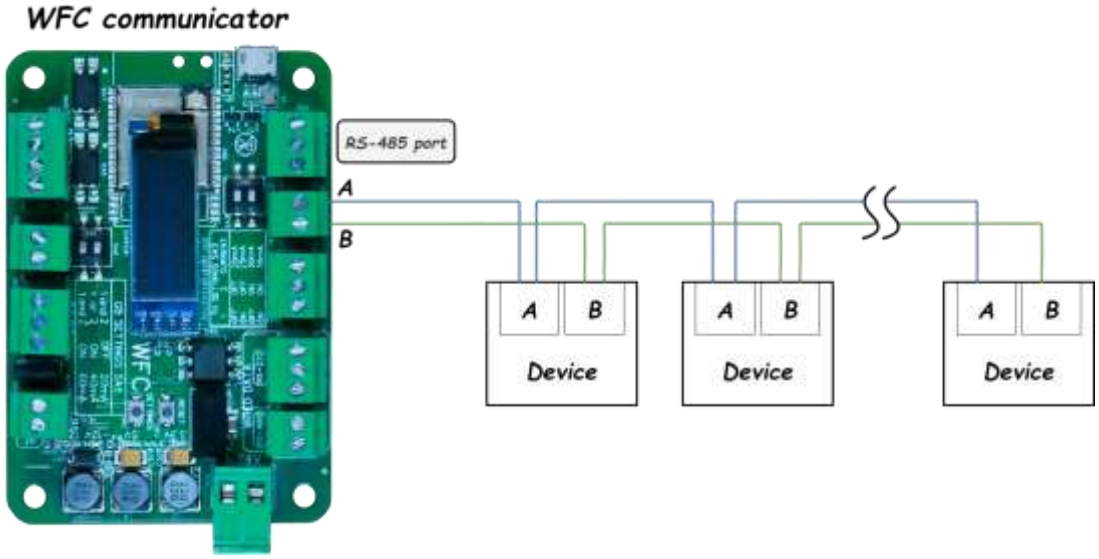
This is a default mode of WFC, in which it is supplied to customers. In this mode the WFC creates its own access point the same way as in the wired mode, so it is possible to enter the WFC web server and change its configuration parameters, review of its operation statistics and update its firmware.

CONNECTION TO MAIN PORTS

WFC communicator has a set of MAIN ports each having a different type of interface.

RS-485 port

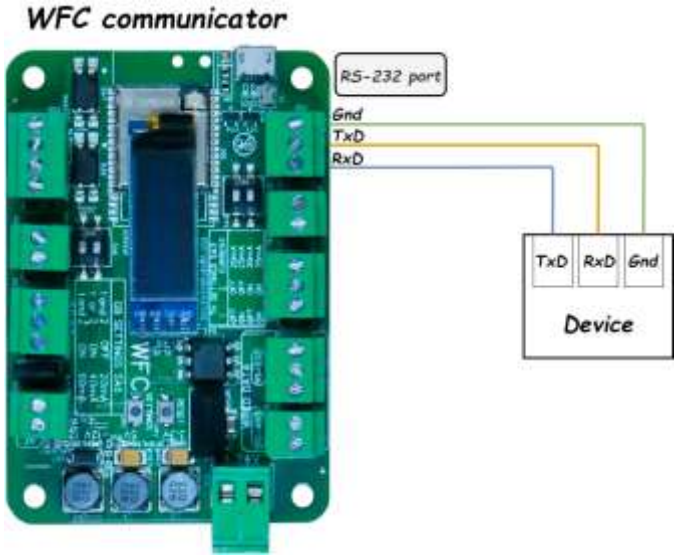
RS-485 port has RS-485 interface and allows connection of multiple devices to it (up to 32 devices maximum). The recommended topology is “daisy chain”. The RS-485 port has 2 wires: A(+) and B(-). If the connected device has a *Ground* pin on it then this pin should be connected to shield of the used cable (it must not be connected to the WFC communicator!), at this this shield of each cable must be connected only to one of the devices.



In case of a long line (more than 100 meters) or operation in environment with high interference there can be an additional terminal resistor with 120 Ohm resistance connected between lines A and B after the last device in the daisy chain.

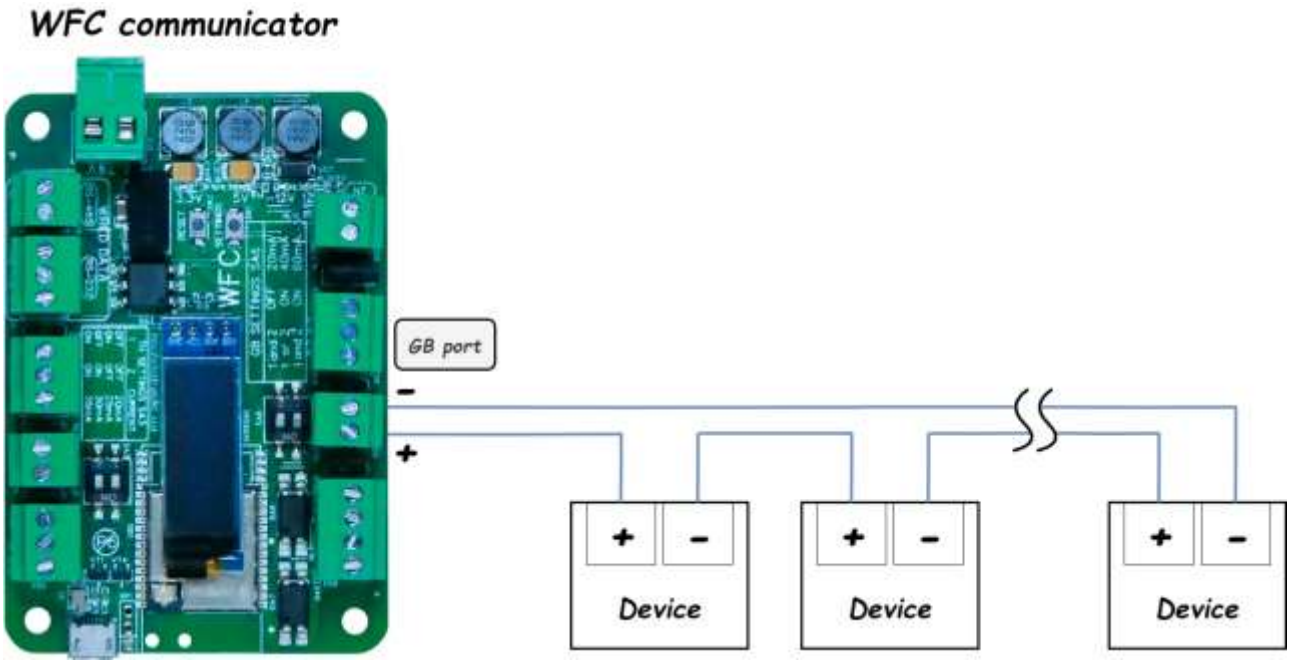
RS-232 port

RS-232 port has RS-232 interface and allows connection of a single device to it. The RS-232 port has 3 wires: TxD, RxD and Gnd.



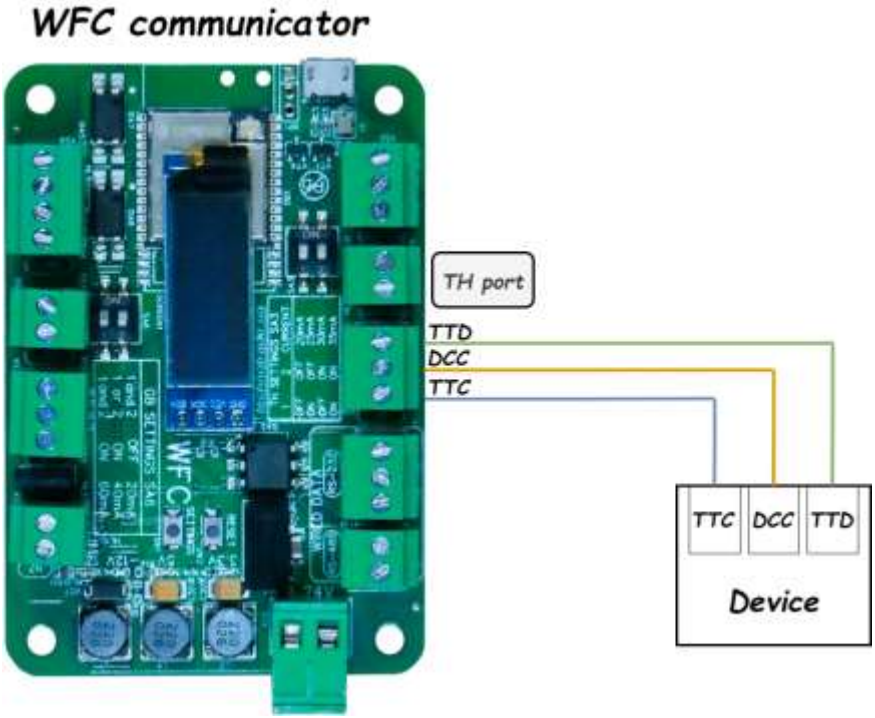
GB port

GB port has 2-wire current loop interface and allows connection of up to 3 devices to it. The recommended topology is “daisy chain”. The GB port has 2 wires: + and -. If the connected device has a *Ground* pin on it then this pin should be connected to shield of the used cable (it must not be connected to the WFC communicator!), at this this shield of each cable must be connected only to one of the devices.



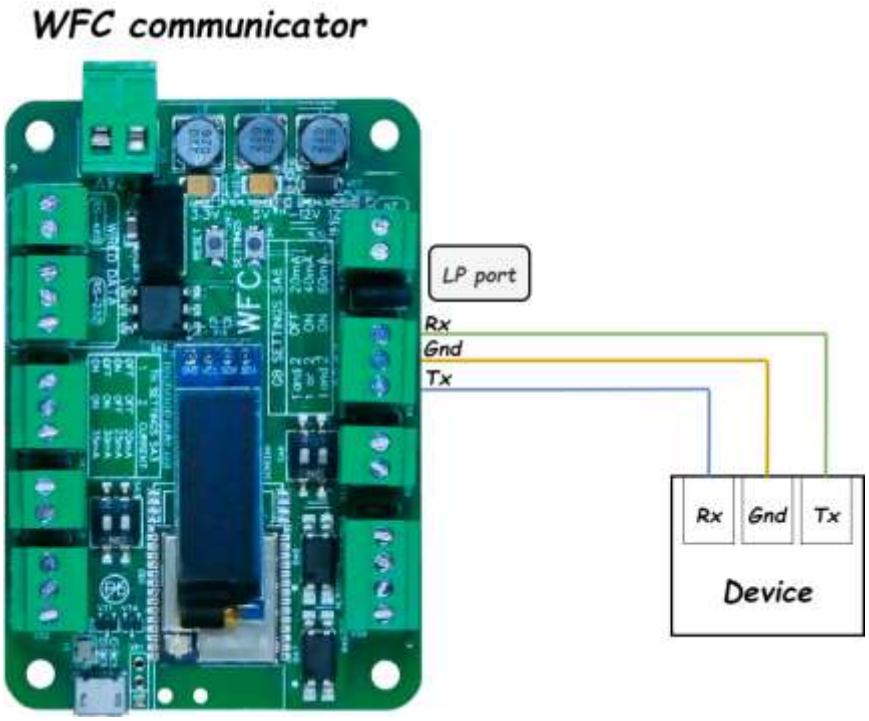
TH port

TH port has 3-wire current loop interface and allows connection of a single device to it. The TH port has 3 wires: TTD, TTC and DCC.



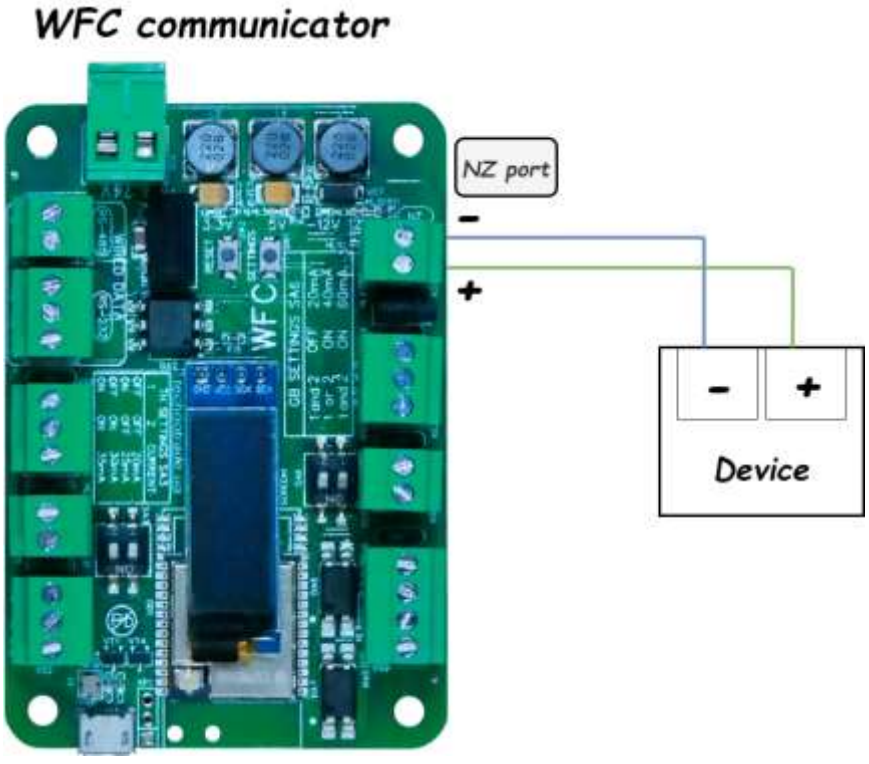
LP port

LP port has 3-wire current loop interface and allows connection of a single device to it. The LP port has 3 wires: Tx, Rx and Gnd.



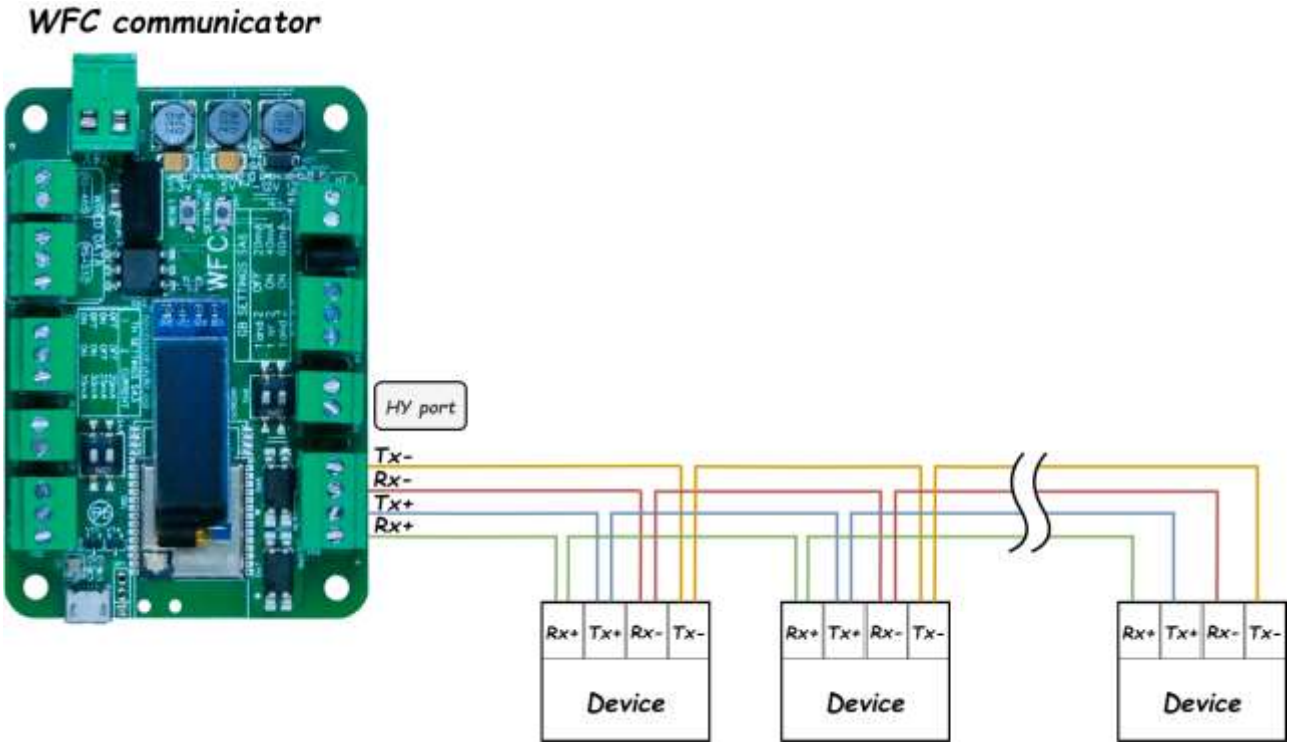
NZ port

NZ port has 2-wire voltage driven interface and allows connection of a single device to it. The NZ port has 2 wires: + and -.



HY port

HY port has 4-wire current loop interface and allows connection of a multiple devices to it. The HY port has 4 wires: Tx+, Tx-, Rx+ and Rx-.



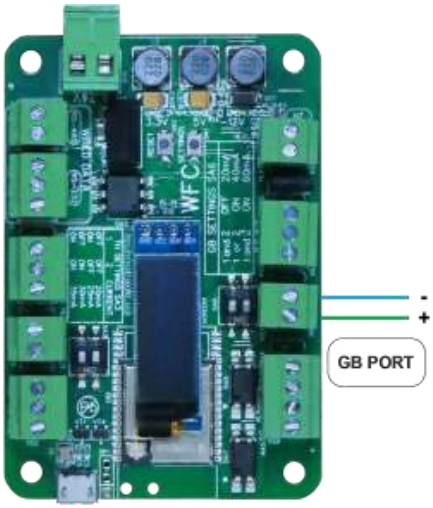
EXAMPLES OF CONNECTION TO FUEL DISPENSERS

Below section shows examples of connection to various brands of fuel dispensers. This information is provided as an example. For obtaining of detailed information on connection to various brands of fuel dispensers, configuration of the fuel dispensers and configuration of PTS-2 controller please refer to our support page *https://www.technotrade.ua/support.* List of supported brands of dispensers is provides on the following link: *https://www.technotrade.ua/pts2-forecourt-controller.html#Supported-pumps-and-register-meters-communication-protocols*.

In some cases, various models of same brand of fuel dispensers may have different interfaces depending mainboard type and type of interface boards use inside the dispenser. In such case the best way to check how your fuel dispenser is to be connected is to take its mainboard photos and send to us on our support mailbox *support@technotrade.ua.* Mainboard is normally located inside the fuel dispenser pumphead behind the displays.

Gilbarco dispenser connection scheme (2-wire current loop interface)

Connection to Gilbarco dispenser is normally made to GB port:

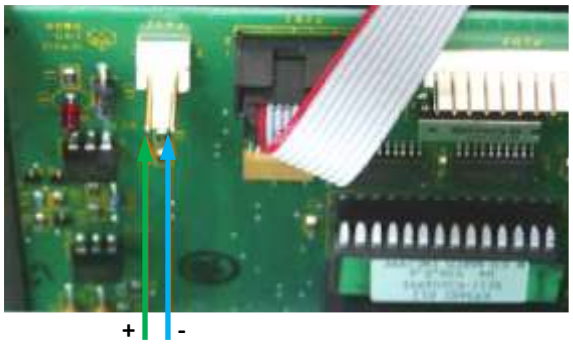


WFC communicator

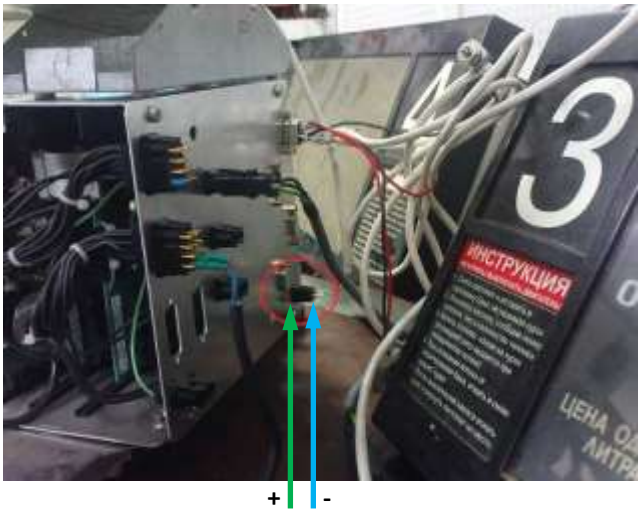
Gilbarco Encore 500 dispenser board

Gilbarco dispenser ASSY M06104A001 rev. B board

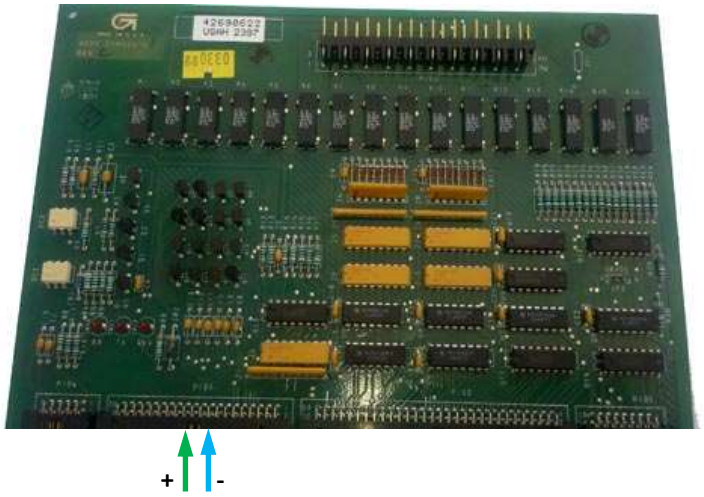
Gilbarco dispenser board



Gilbarco Euroline dispenser board

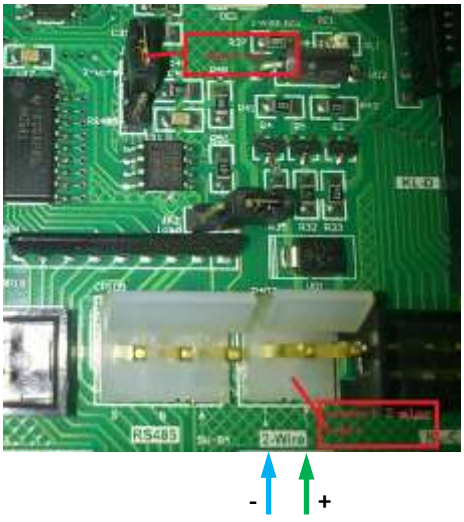


Gilbarco Highline / Dimension Assy dispenser board

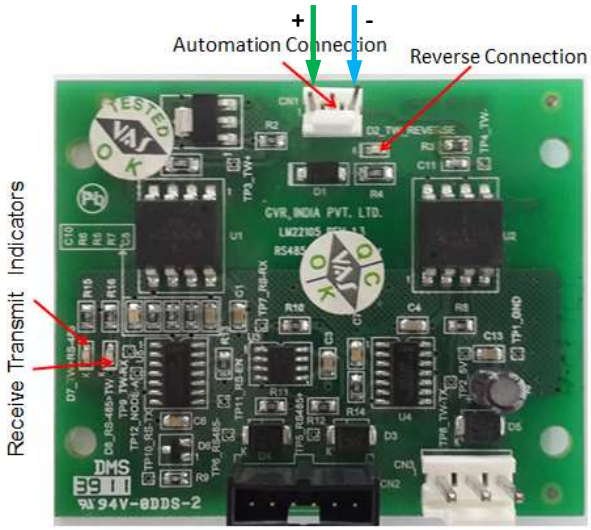


Gilbarco Endeavor dispenser board

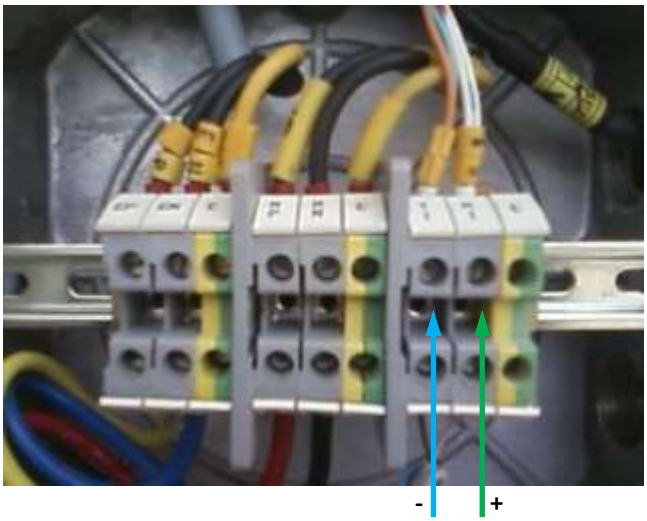
Gilbarco 3202 series dispenser board



Gilbarco Endeavor dispenser board



Gilbarco Frontier dispenser board

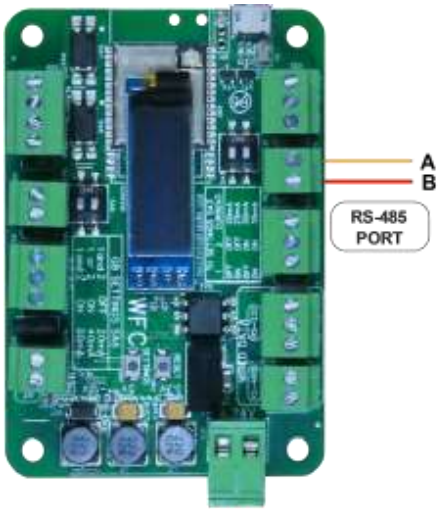


Gilbarco Advantage China motherboard

Gilbarco Encore dispenser board

Gilbarco dispenser connection scheme (RS-485 interface)

Connection to some types of Gilbarco dispenser can be made to RS-485 port:

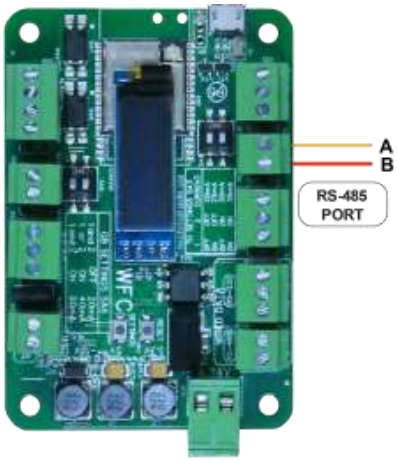


WFC communicator

Gilbarco China BK3203 dispenser mainboard

Wayne Dresser dispenser connection scheme (RS-485 interface)

Connection to Wayne Dresser dispenser is normally made to RS-485 port:



WFC communicator

Wayne Dresser iGEM dispenser board

Wayne Dresser STMTAX Duplex dispenser

Wayne Dresser iGEM2 dispenser board

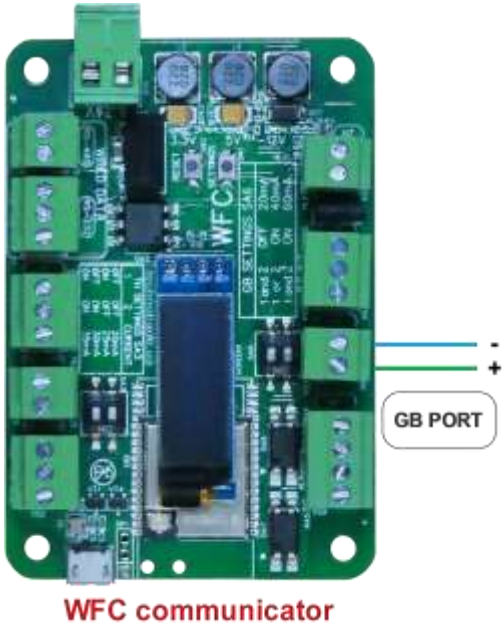
Wayne Dresser x2000/x2003 dispenser interface board

Wayne Dresser V387 dispenser board

Wayne Dresser Global Vista CNG dispenser interface board

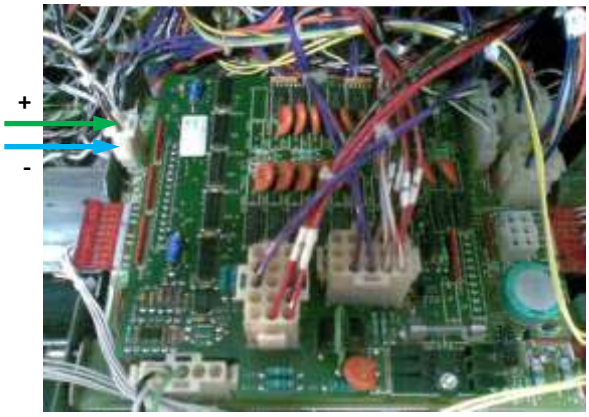
Wayne Dresser dispenser connection scheme (current loop interface)

Connection to Wayne Dresser dispenser is made to GB port:



Wayne Dresser dispenser iGEM board

Wayne Dresser V387 dispenser board

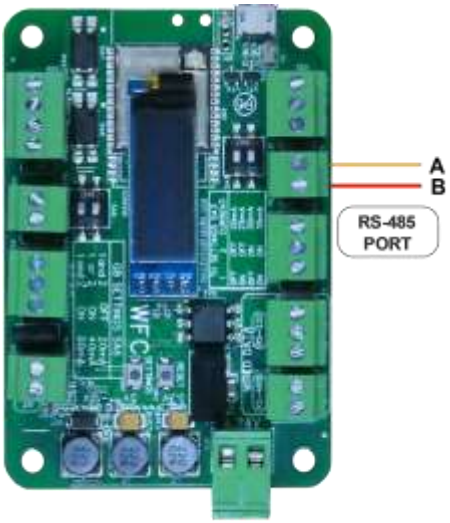


Wayne Dresser iGEM2 dispenser board

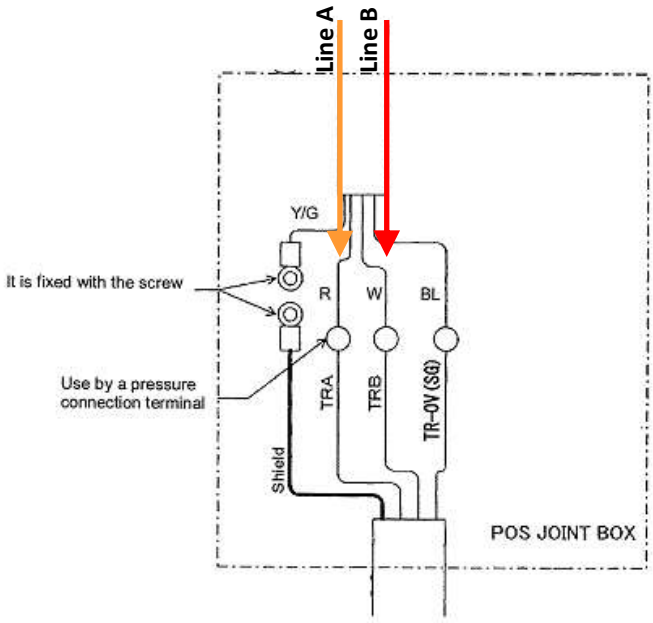
Wayne Dresser STMTAX Duplex dispenser

TATSUNO (Japan) dispenser connection scheme

Connection to TATSUNO (Japan) dispenser is made to RS-485 port:



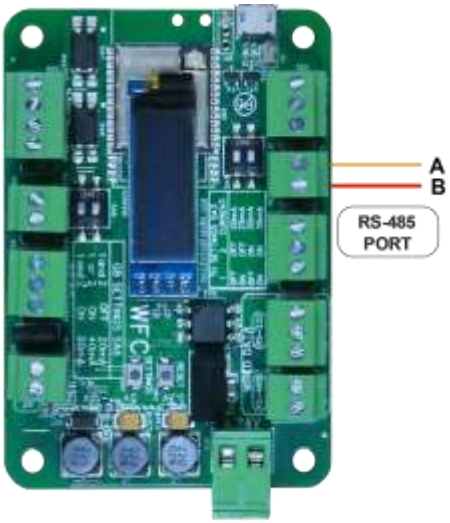
WFC communicator



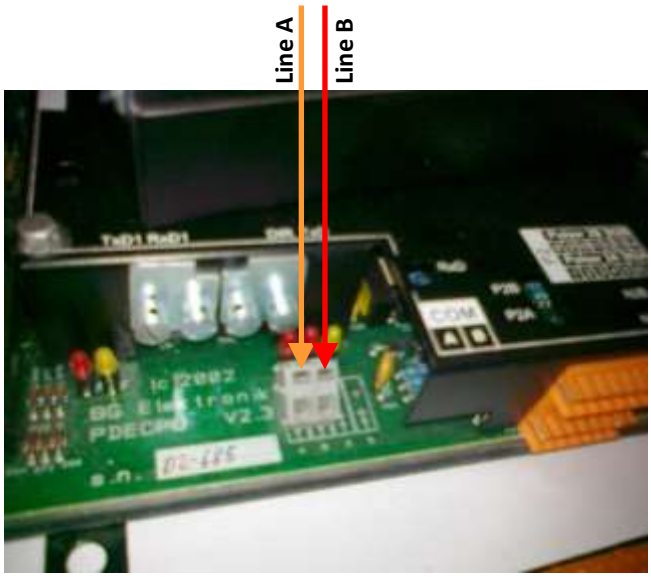
TATSUNO POS joint box

TATSUNO Europe (former Benc) dispenser connection scheme

Connection to TATSUNO Europe (previously named Benc) dispenser is made to RS-485 port:



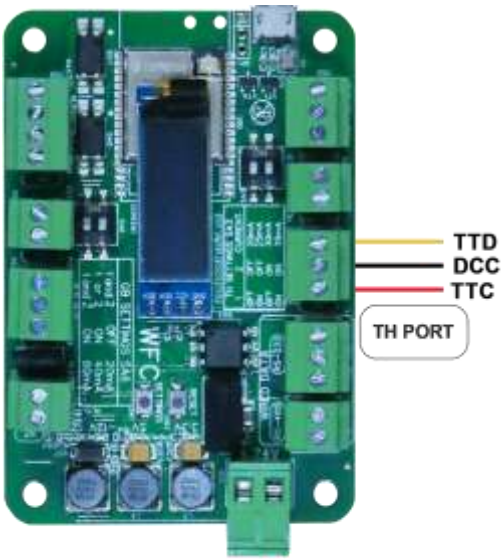
WFC communicator



TATSUNO Benc pumphead

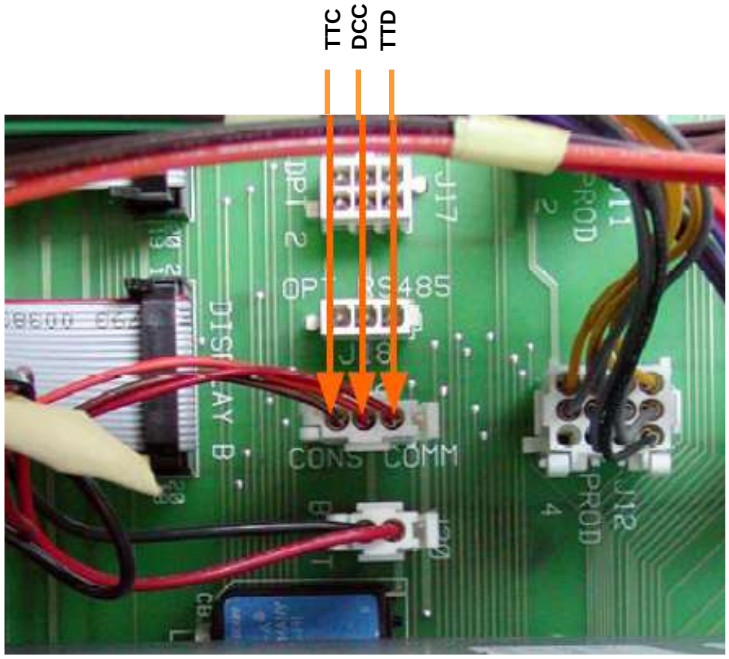
Tokheim dispenser connection scheme (3-wire current loop interface)

Connection to Tokheim dispenser is made to TH port.

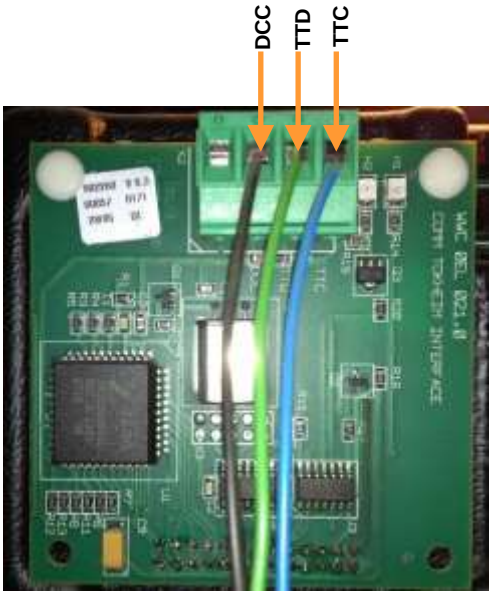


WFC communicator

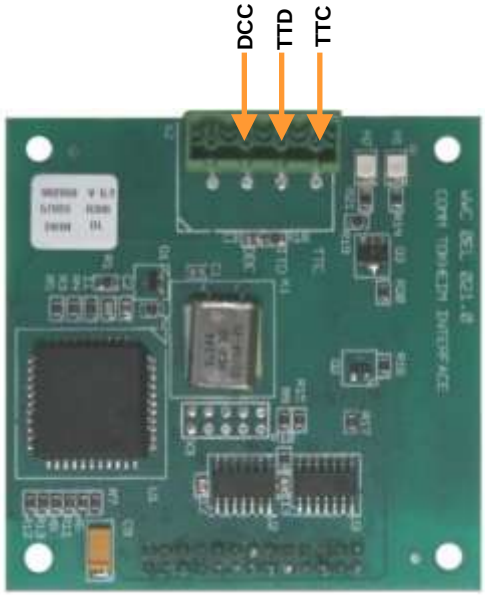
Tokheim dispenser board



Tokheim dispenser board



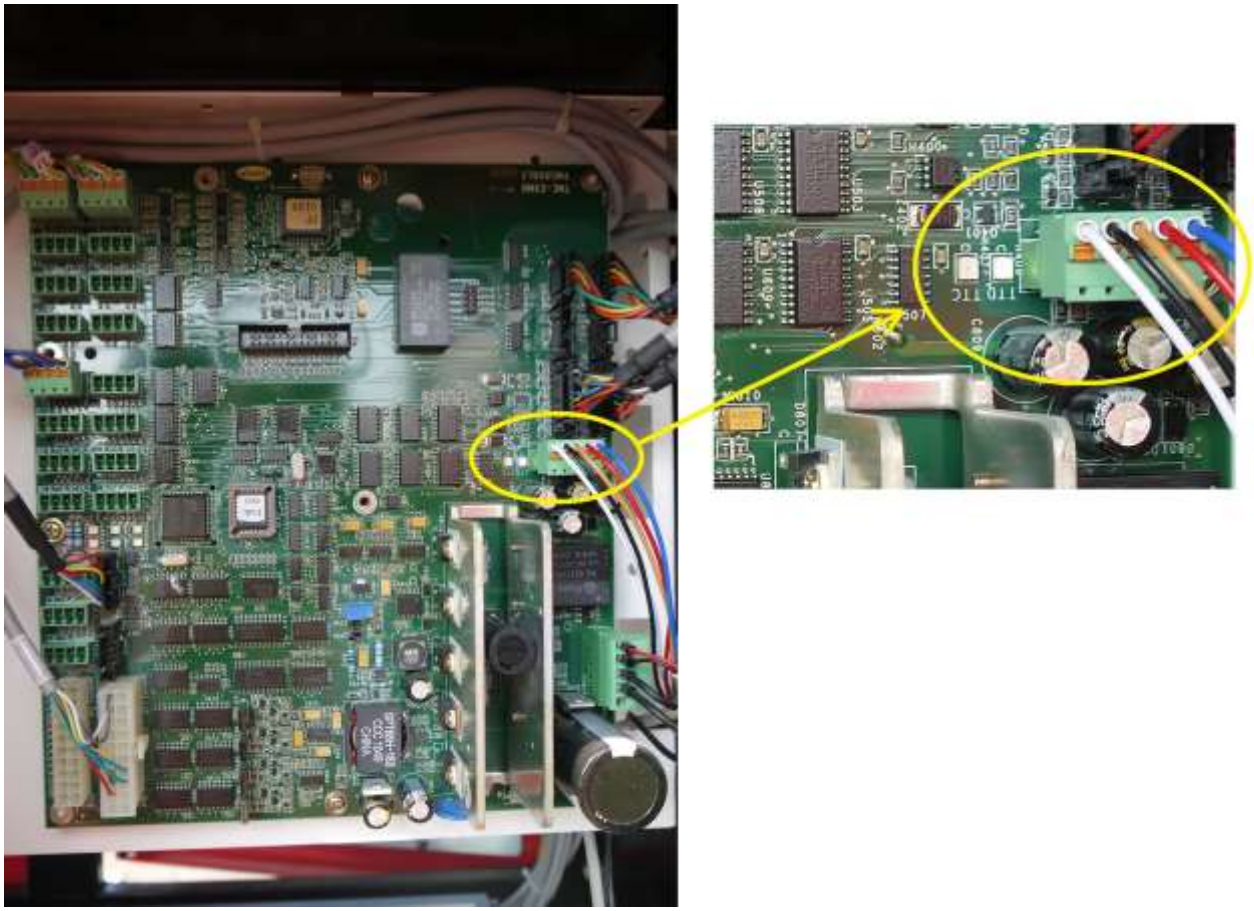
Tokheim dispenser interface board



Tokheim dispenser interface board

Tokheim dispenser calculator with interface board

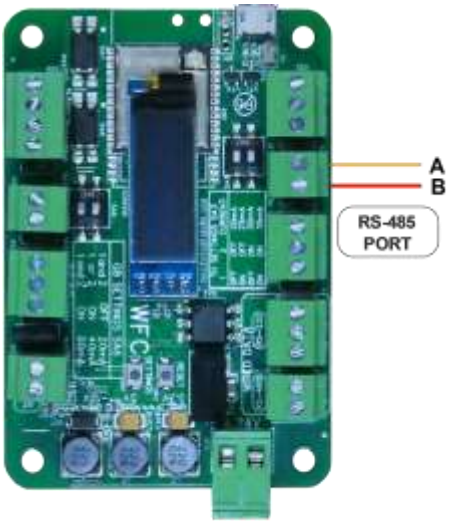
Tokheim dispenser interface board



Tokheim Q320T dispenser calculator

Tokheim dispenser connection scheme (RS-485 interface)

Connection to some Tokheim dispensers can be made to RS-485 port:



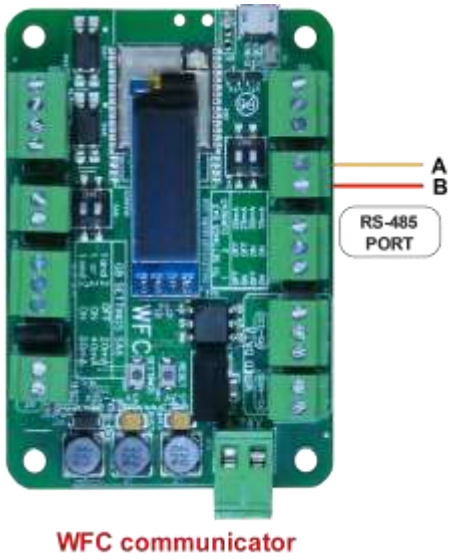
WFC communicator

Tokheim dispenser motherboard

Tokheim HengShan dispenser motherboard

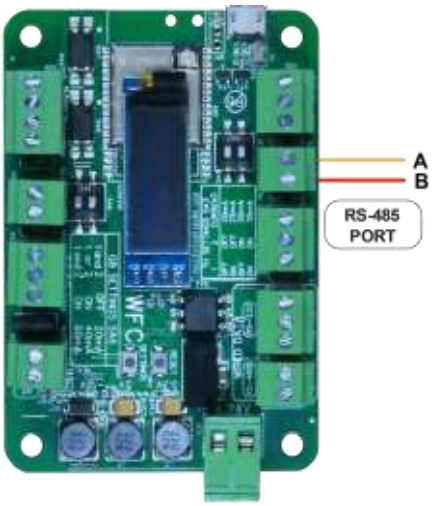
Tokheim India dispenser connection scheme

Connection to Tokheim India dispenser is made to RS-485 port:



Nuovo Pignone dispenser connection scheme (RS-485 interface)

Connection to Nuovo Pignone dispensers with RS-485 interface is made to RS-485 port. At this Nuovo Pignone dispenser should have an interface board for RS-485 interface and should be adjusted to have Dart protocol.

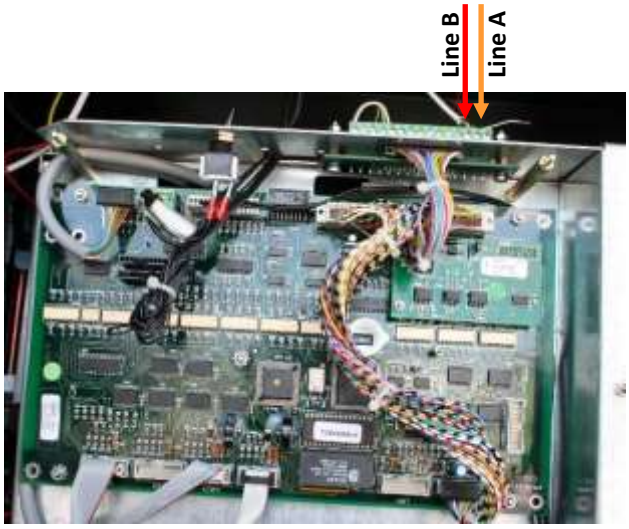


WFC communicator

Nuovo Pignone interface boards for RS-485 interface for monoproduct and multiproducts dispensers

More info can be found on:
https://www.technotrade.ua/nuovo_pignone_interface_converter.html

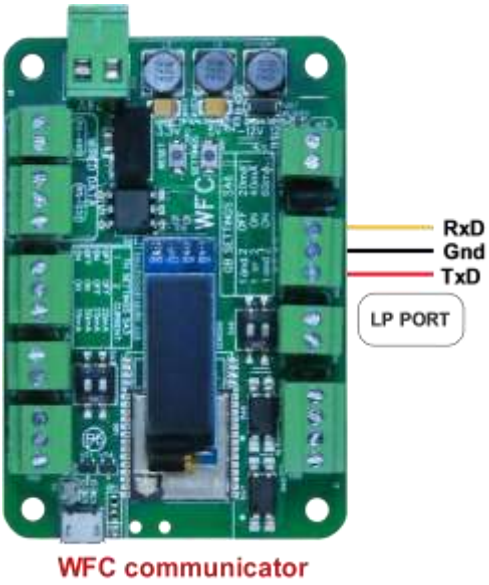
Nuovo Pignone monoproduct dispenser board

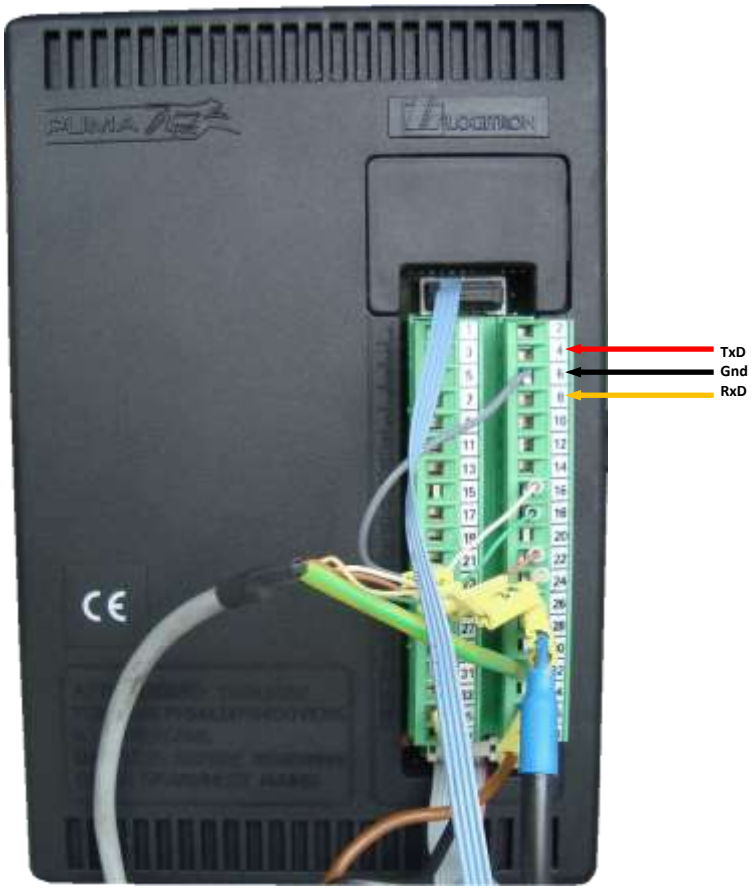


Nuovo Pignone multiproduct dispenser board

Logitron dispenser connection scheme (3-wire current loop interface)

Connection to Logitron dispensers with 3-wire current loop interface is made to LP port

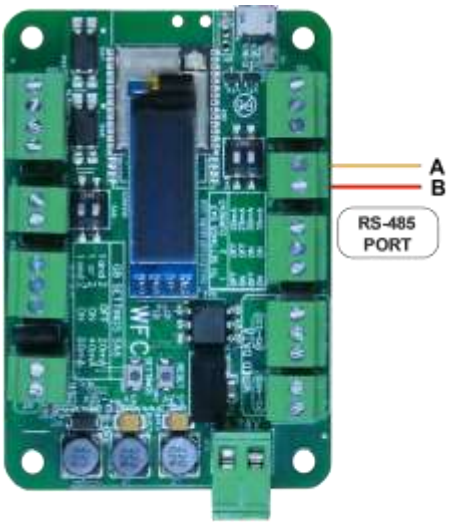




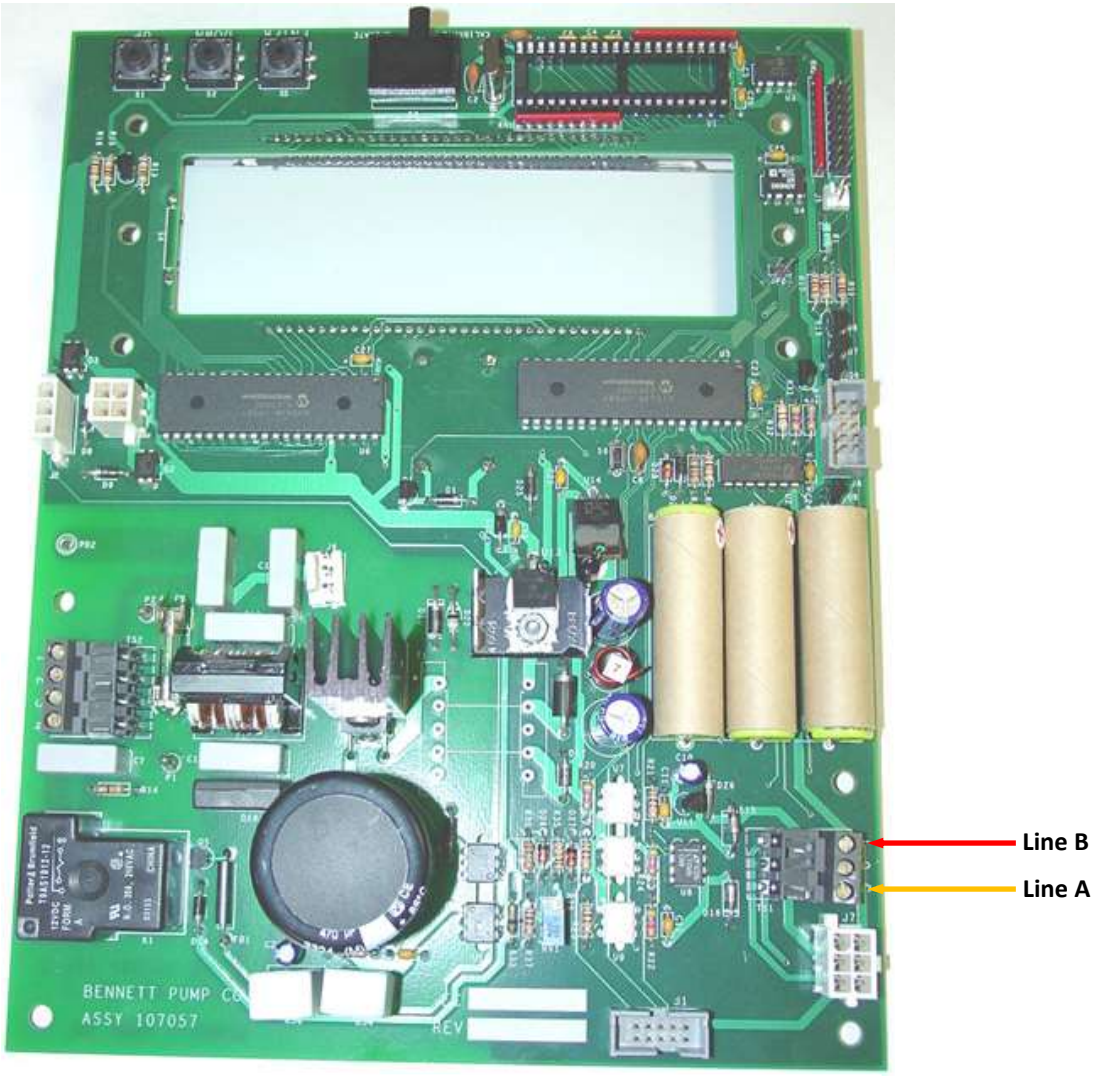
PUMA Logitron computer

Bennett dispenser connection scheme (RS-485 interface)

Connection to some Bennett dispensers can be made to RS-485 port:



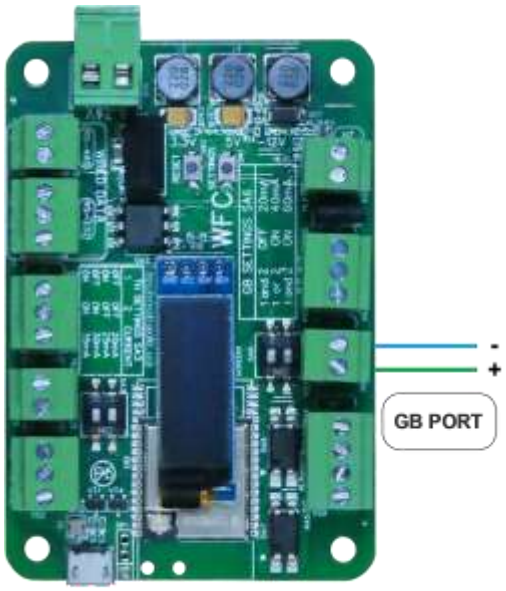
WFC communicator



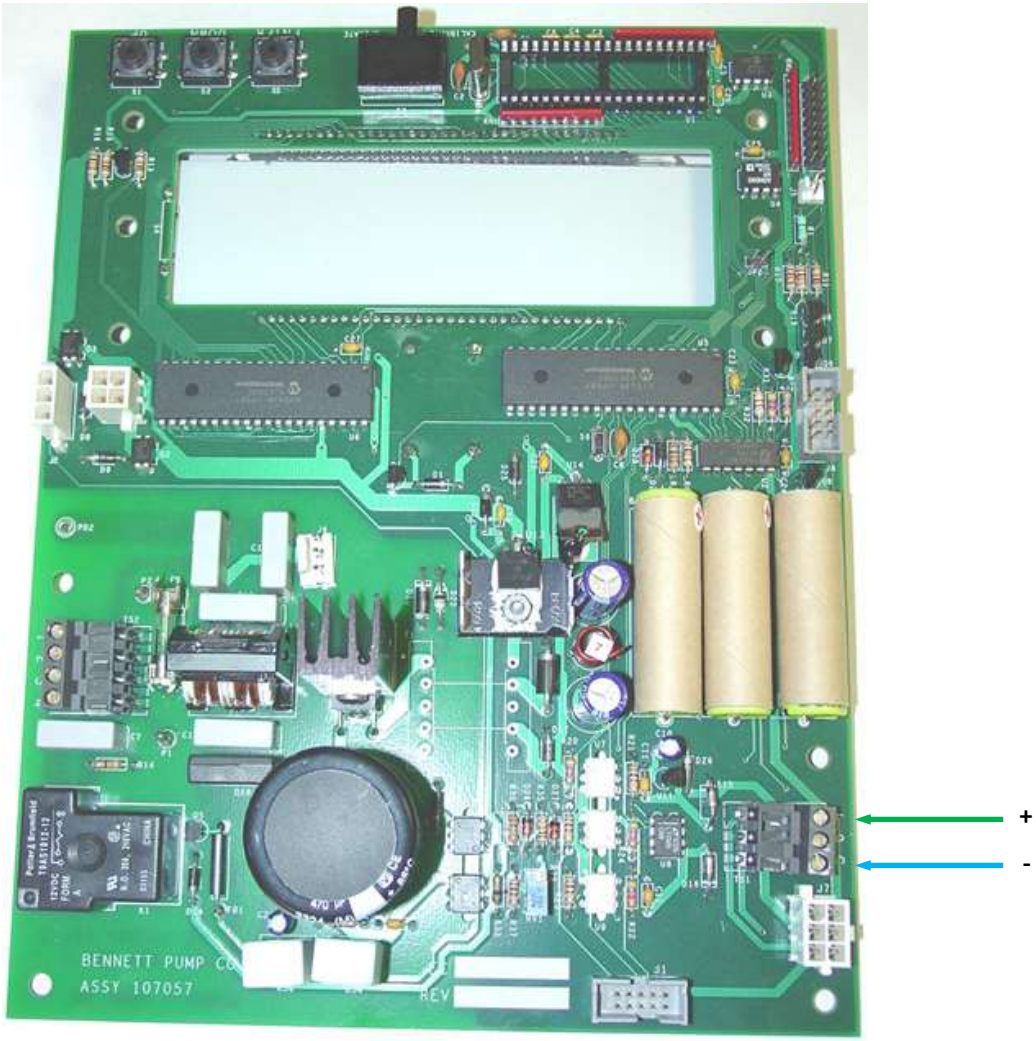
Bennett dispenser board

Bennett dispenser connection scheme (2-wire current loop interface)

Connection to Bennett dispensers with 2-wire current loop interface is made to GB port.



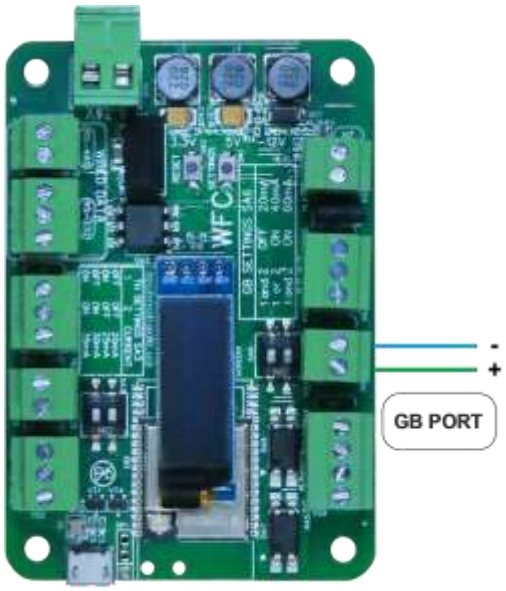
WFC communicator



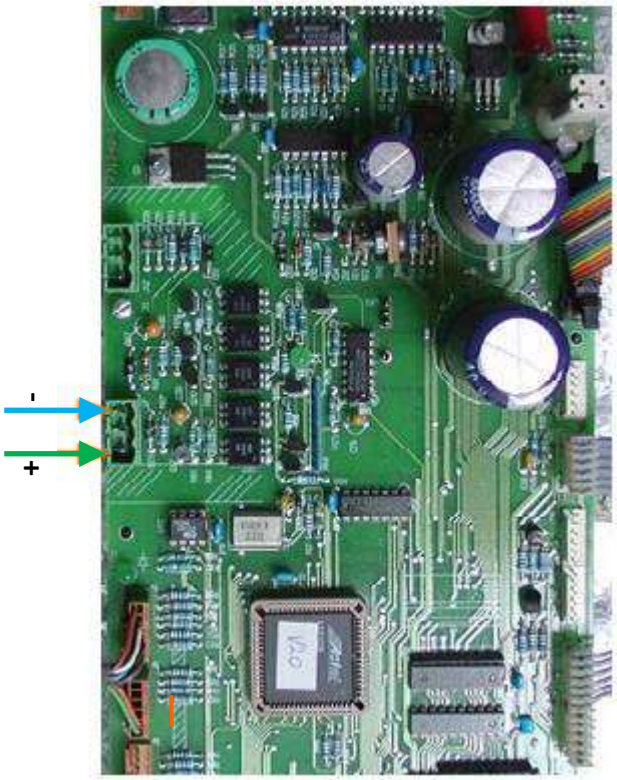
Bennett dispenser board

Batchen Email dispenser connection scheme

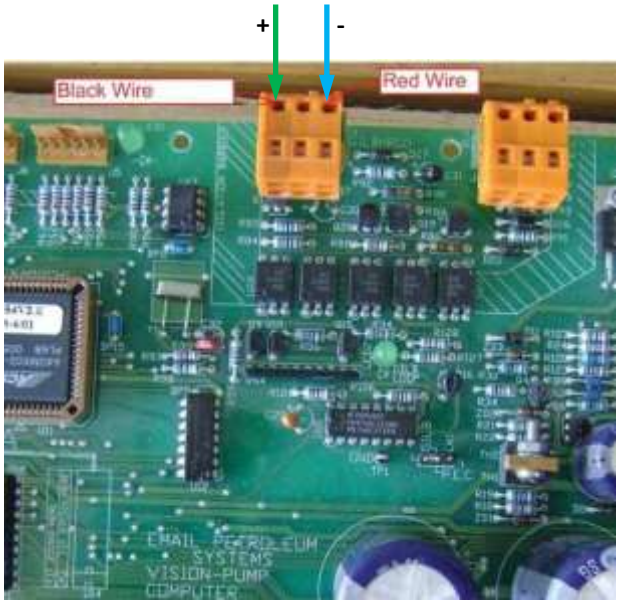
Connection to Batchen dispenser is made to GB port.



WFC communicator



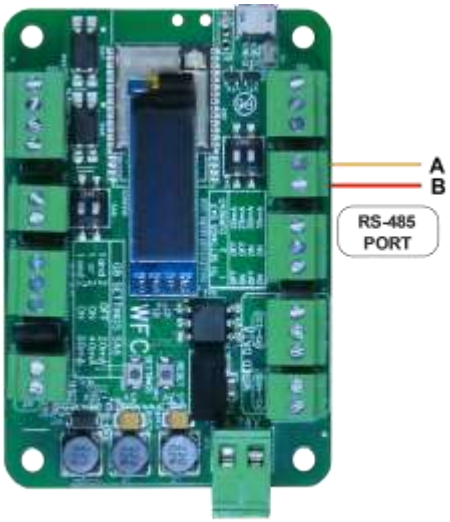
Batchen dispenser board

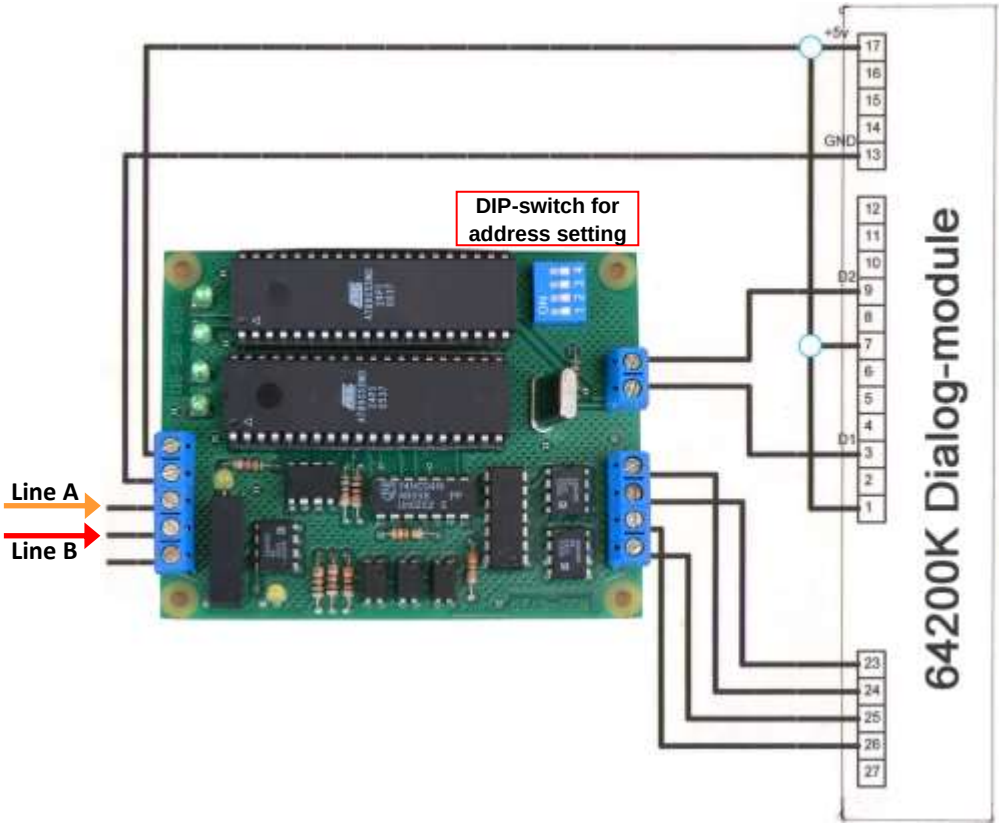


Batchen dispenser board

Scheidt & Bachmann T20 dispenser connection scheme

Connection to Scheidt&Bachmann T20 dispenser is made to RS-485 port through S&B T20 interface converter board.



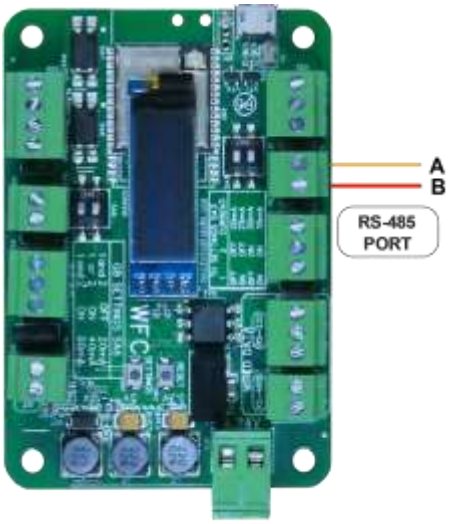


Address setting on S&B T20 interface converter board using a DIP-switch

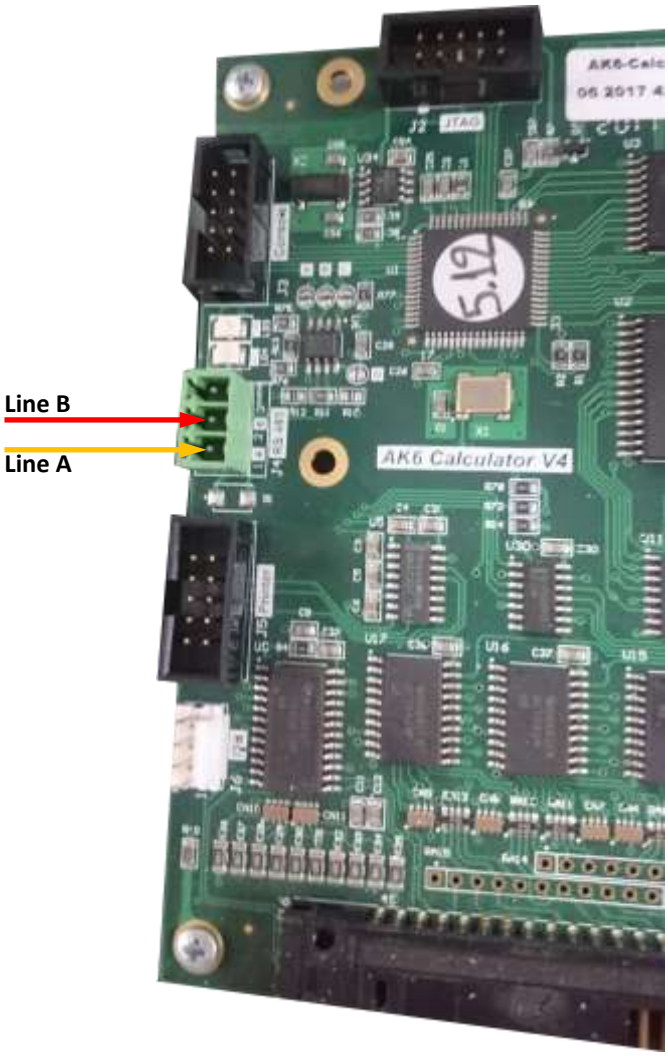
Address	1 & 2	3 & 4	5 & 6	7 & 8	9 & 10	11 & 12	13 & 14	15 & 16
DIP 1	OFF	OFF	OFF	OFF	ON	ON	ON	ON
DIP 2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
DIP 3	OFF	ON	OFF	ON	OFF	ON	OFF	ON
DIP 4	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Neotec dispenser connection scheme

Connection to Neotec dispenser mainboard is made to RS-485 port:



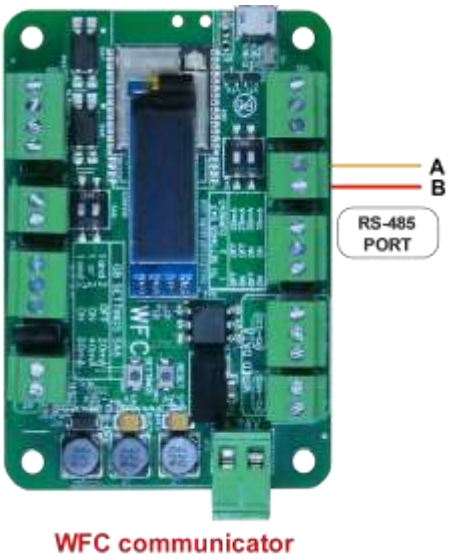
WFC communicator

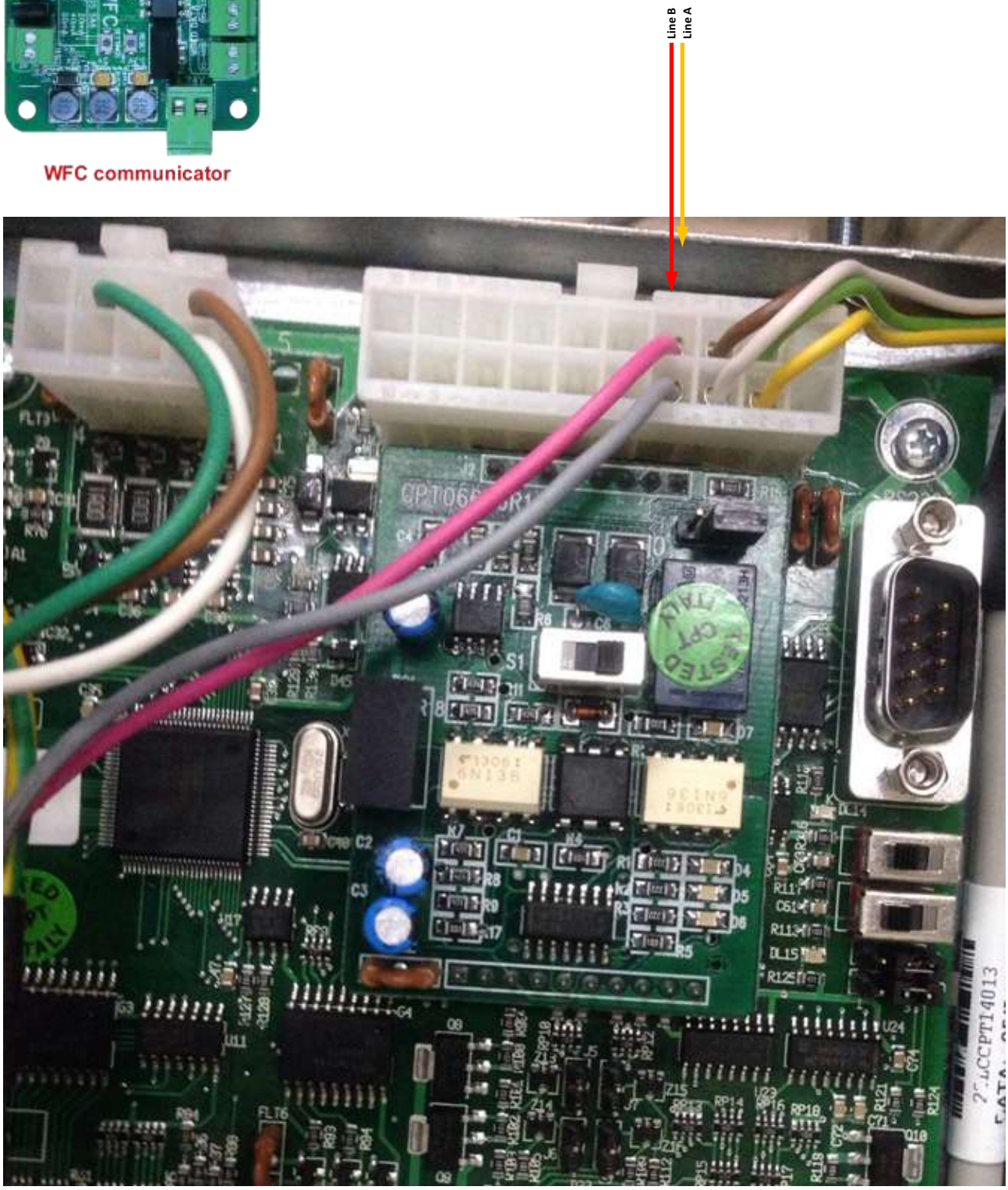


AK6 mainboard

Coptron dispenser connection scheme

Connection to Coptron pumphead is made to RS-485 port:

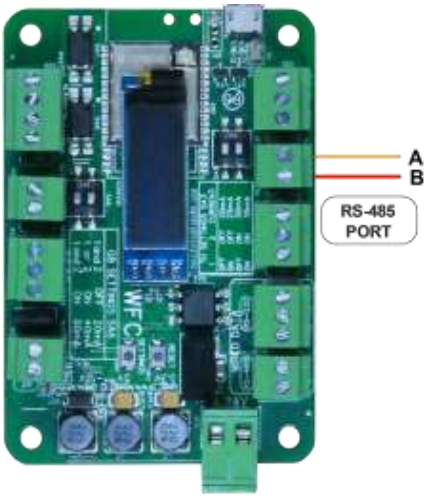




Coptron pumphead

Midco dispenser connection scheme

Connection to Midco pumphead is made to RS-485 port:

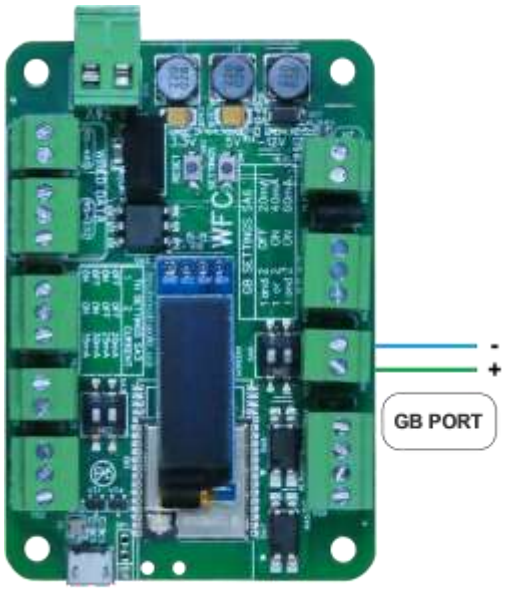


WFC communicator

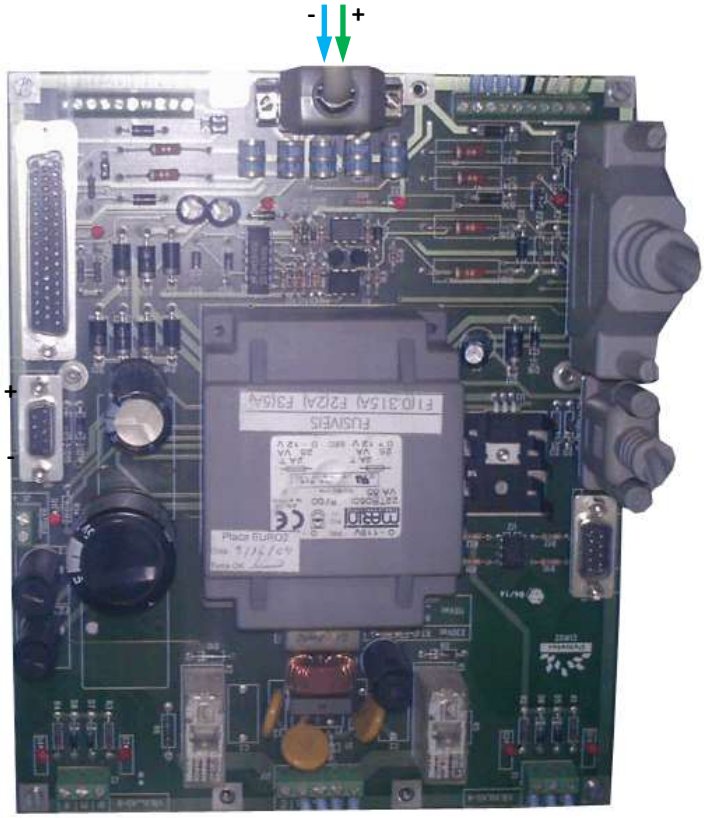
Midco pumphead

Petrotec dispenser connection scheme

Connection to Petrotec dispenser is made to GB port.



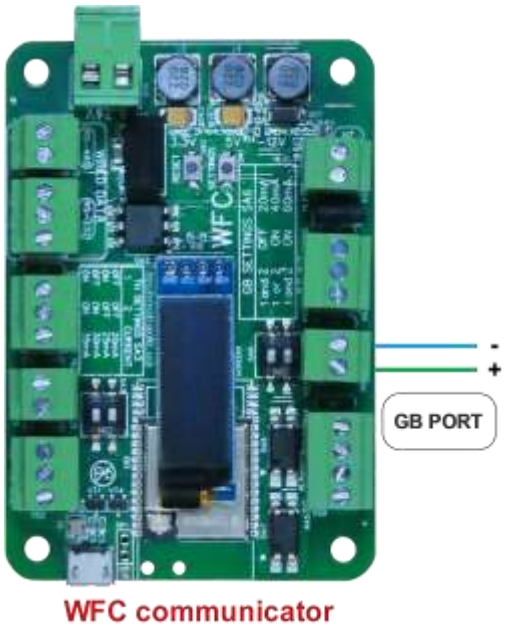
WFC communicator

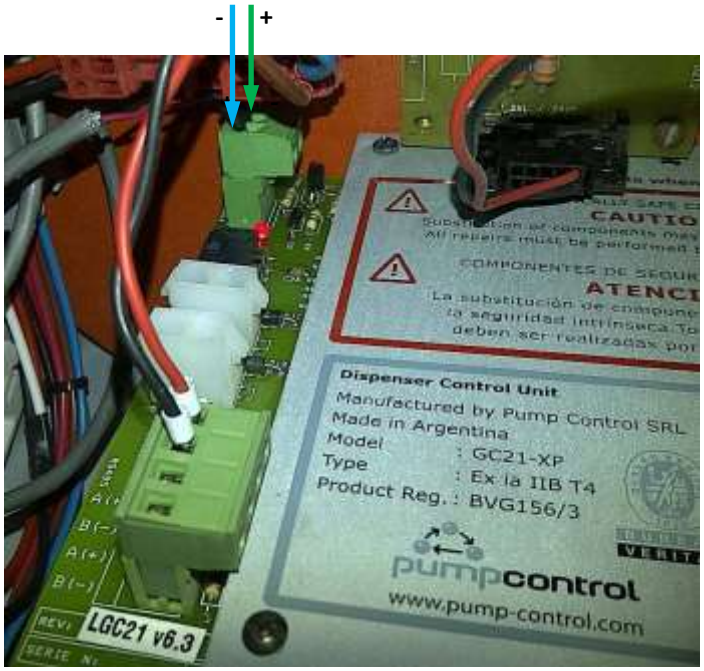


Petrotec dispenser board

Galileo dispenser connection scheme

Connection to Galileo dispenser is made to GB port.

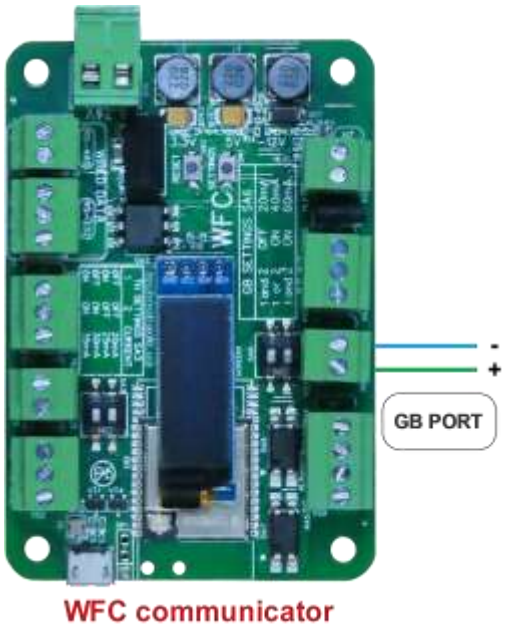


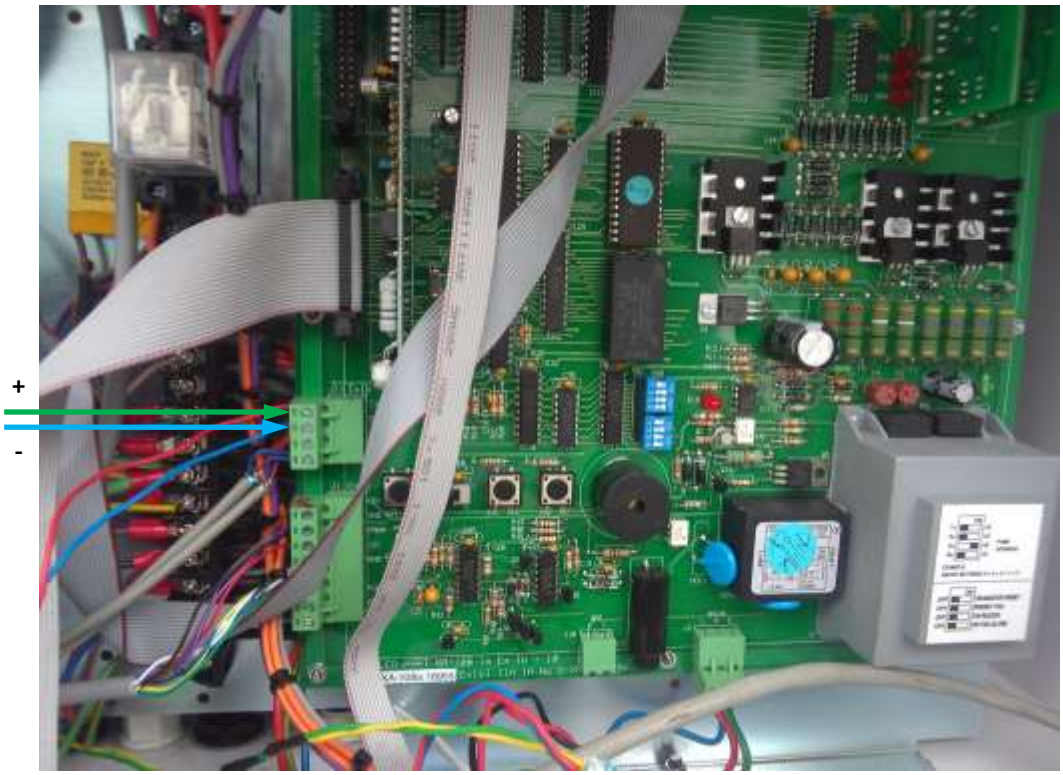


Galileo dispenser board

Prowalco dispenser connection scheme

Connection to Prowalco dispenser is made to GB port.

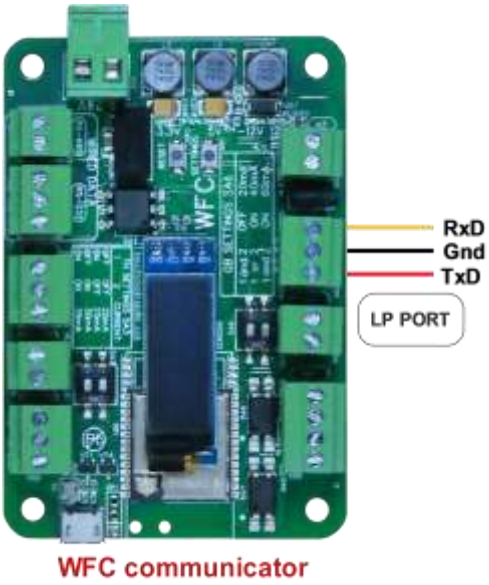




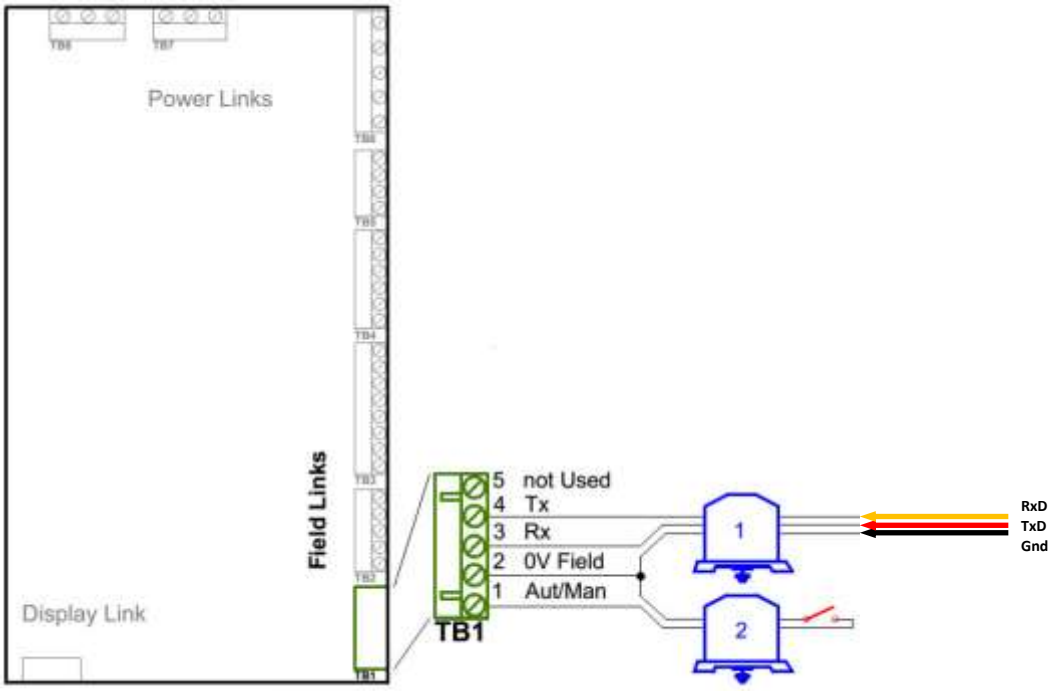
Prowalco dispenser board

Emgaz Dragon / Fornovo / Vanzetti LPG dispenser with EsiWelma pumphead connection scheme

Connection to EsiWelma pumphead is made to LP port.



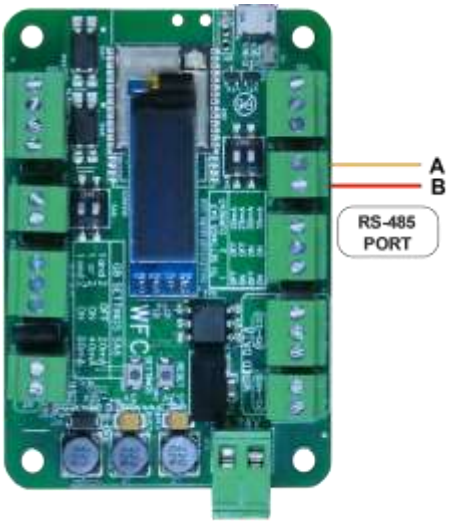
WFC communicator



EsiWelma pumphead

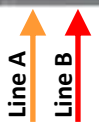
Maser dispenser connection scheme

Connection to Maser dispenser is made to RS-485 port:



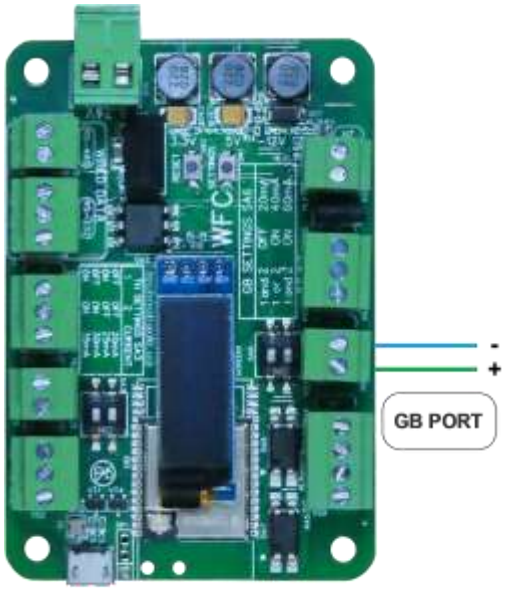
WFC communicator

Maser dispenser computer connections label

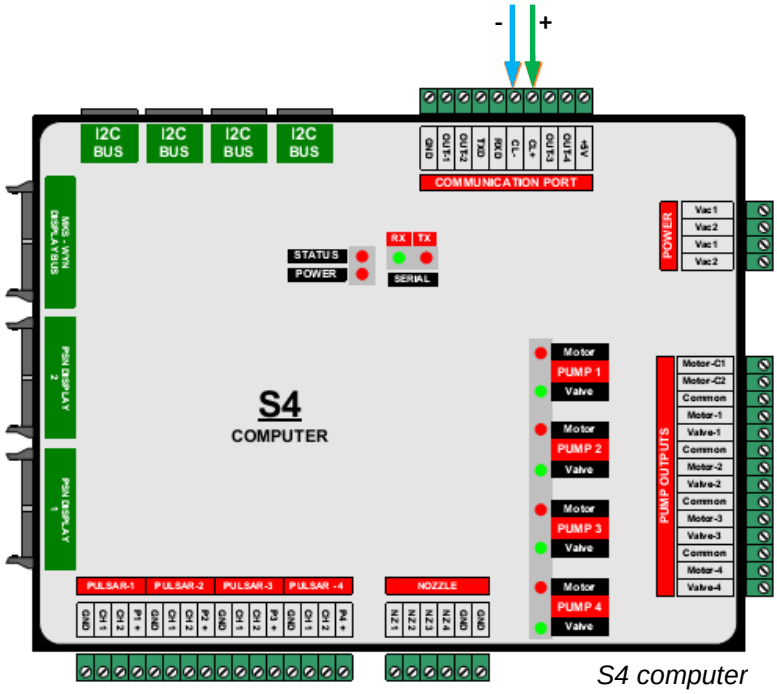


Petposan-S4 / Meksan-S4 / Europump-S4 / Yenen dispensers connection scheme

Connection to S4 computer is made to GB port.



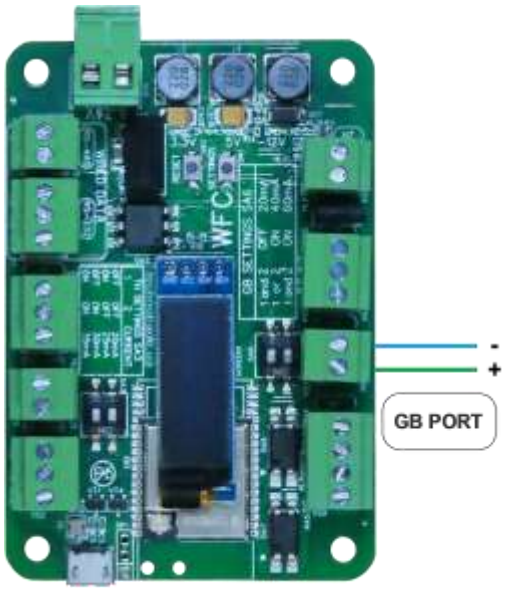
WFC communicator



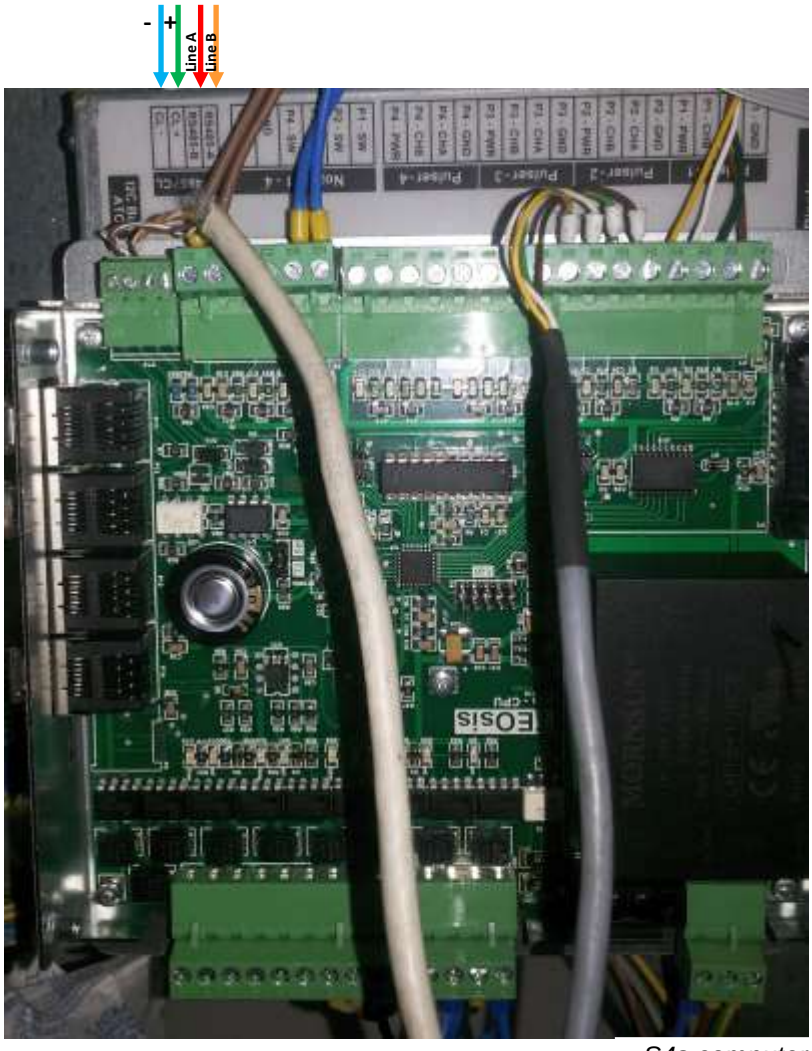
S4 computer

Yenen dispensers connection scheme

Connection to S4s computer is made either to RS-485 port or to GB port:



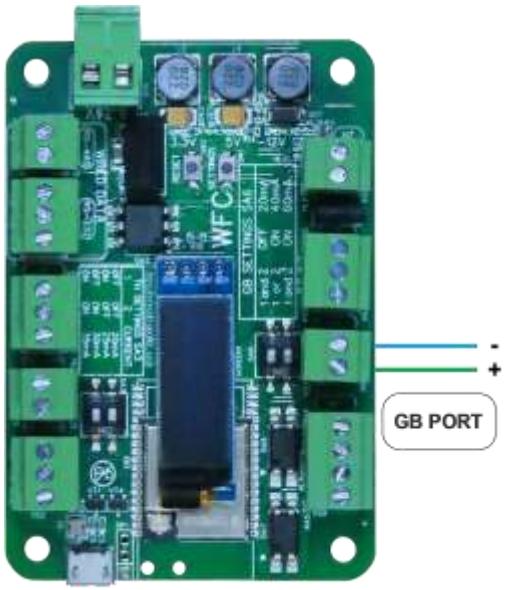
WFC communicator



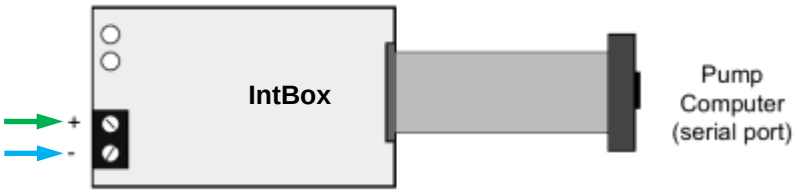
S4s computer

Petposan-Beta / Europump-Beta dispensers connection scheme

Connection to Beta computer is made to GB port.



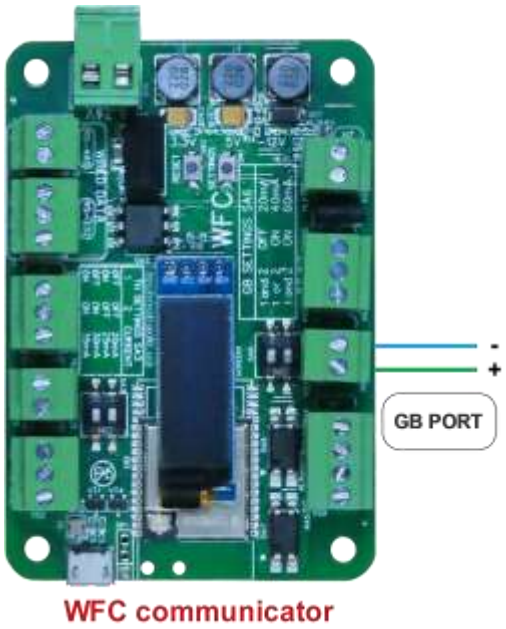
WFC communicator

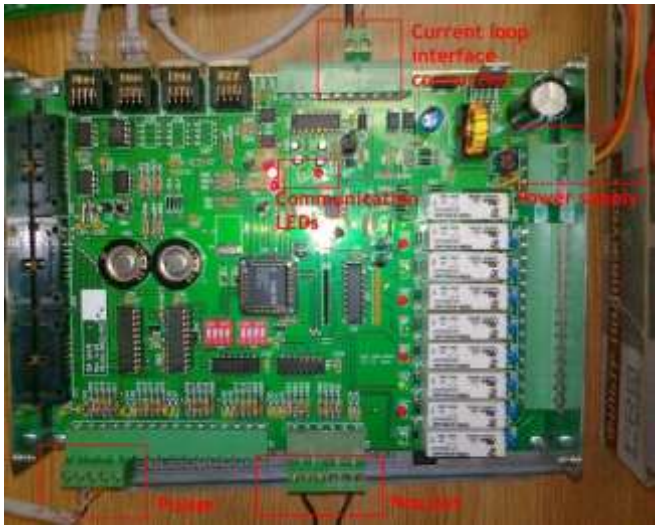


Petposan-Beta CPU

EuroPump dispenser connection scheme

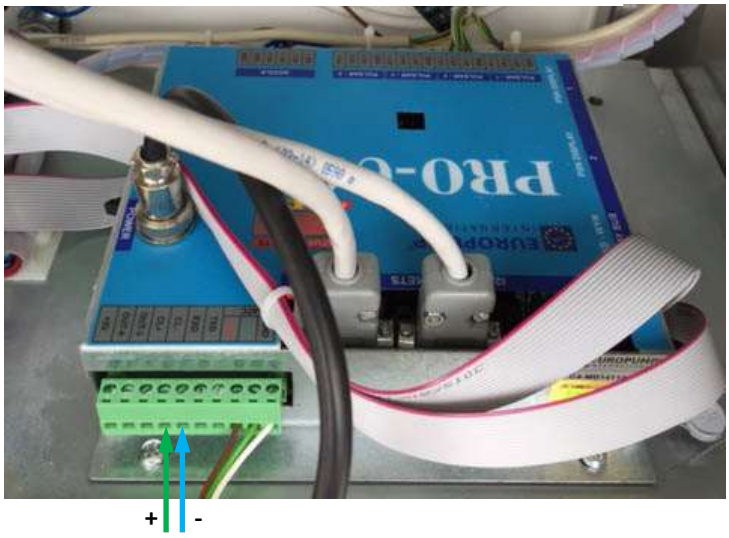
Connection to EuroPump dispenser is made to GB port:





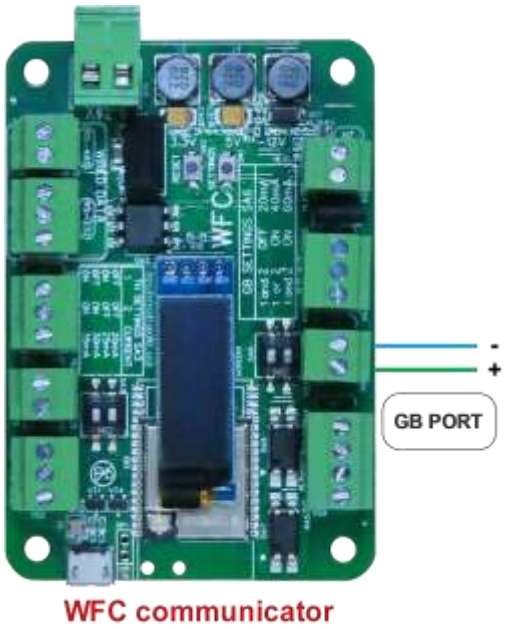
EuroPump EUROSTAR E2-SL dispenser computer

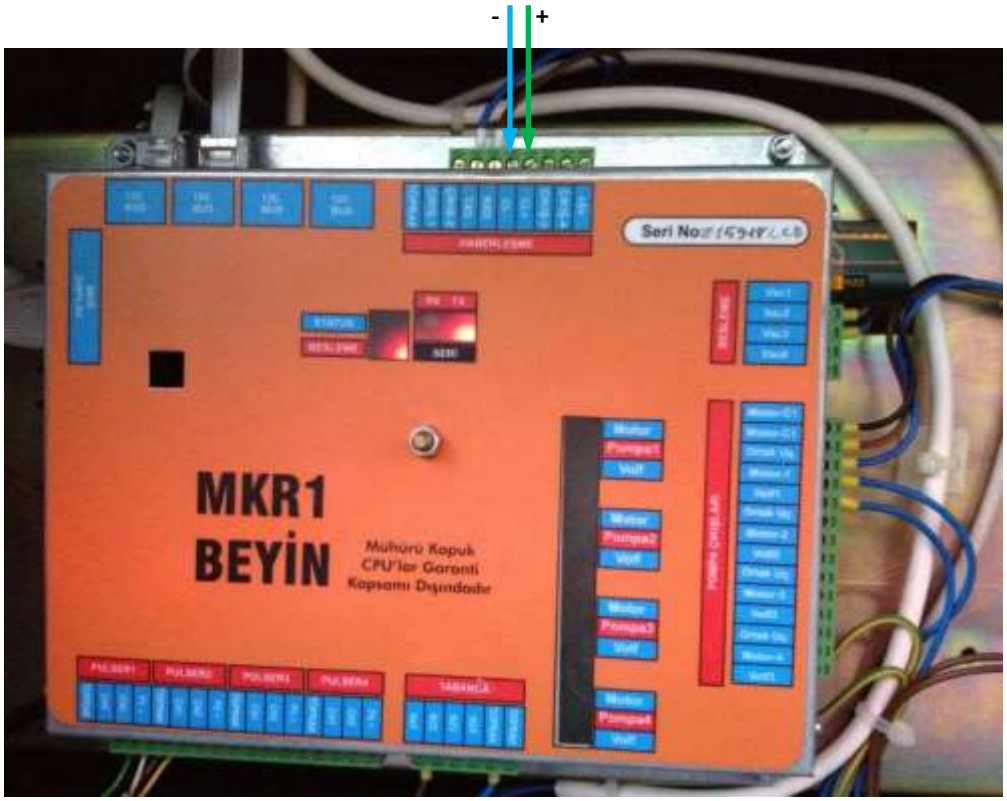
EuroPump dispenser computer



Mekser dispenser connection scheme

Connection to Mekser dispenser is made to GB port:

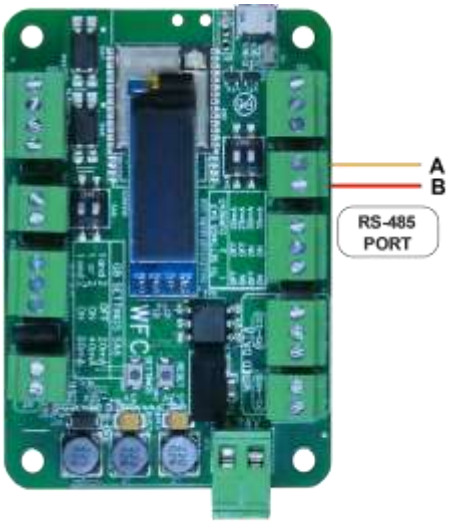




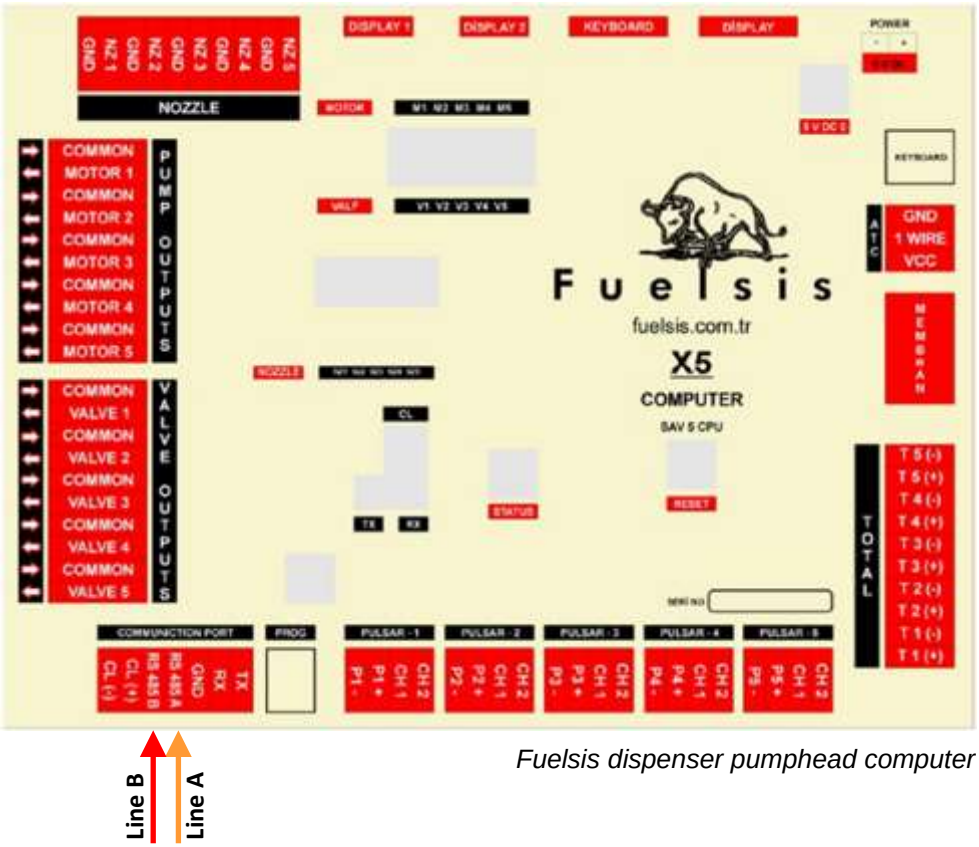
Mekser dispenser board

Fuelsis dispenser connection scheme

Connection to Fuelsis dispenser is made to RS-485 port:



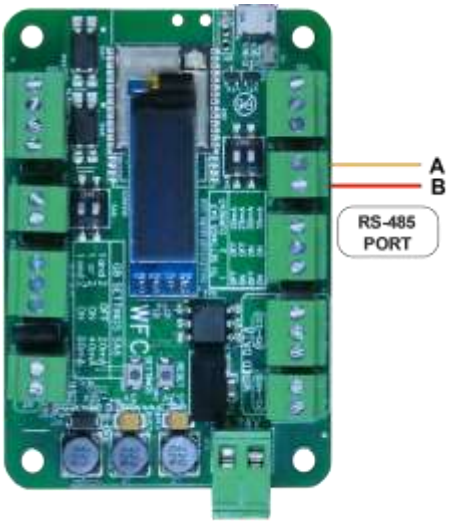
WFC communicator



Fuelsis dispenser pumphead computer

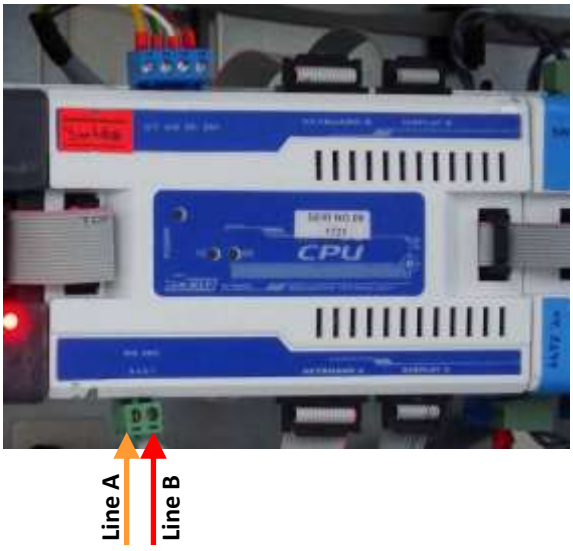
Mepsan Unimep dispenser connection scheme

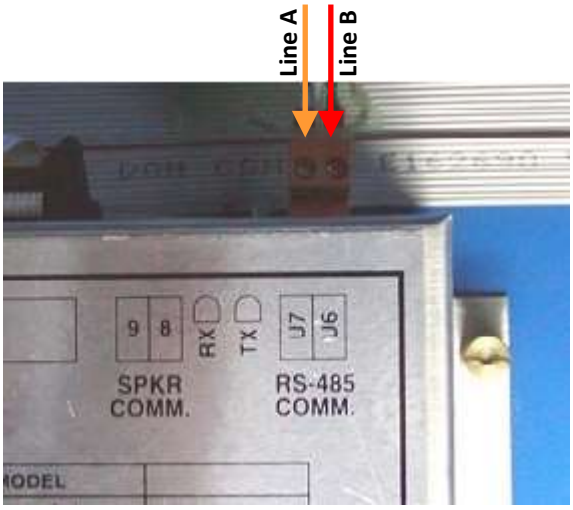
Connection to Mepsan dispenser is made to RS-485 port:



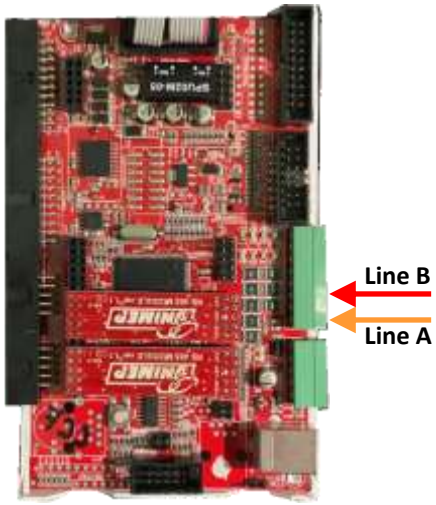
WFC communicator

Mepsan Unimep dispenser calculator





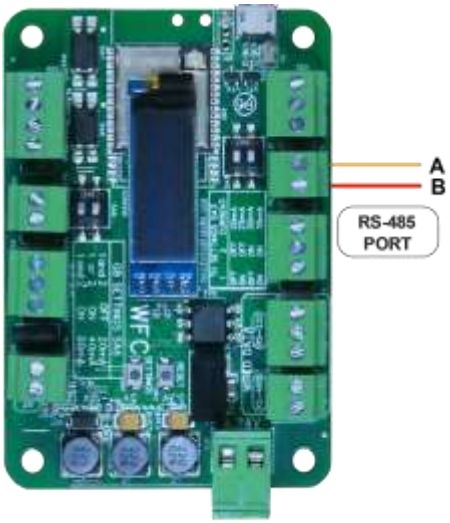
Mepsan Unimep dispenser calculator



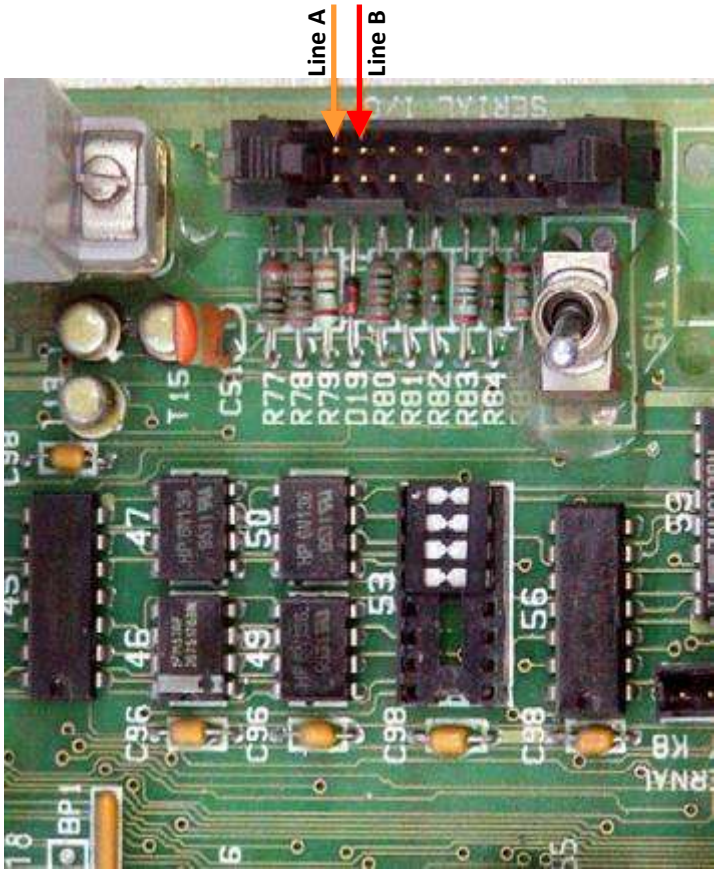
Mepsan dispenser board

Meksan / Wayne SU86 dispenser connection scheme

Connection to Meksan / Wayne SU86 dispenser is made to RS-485 port:



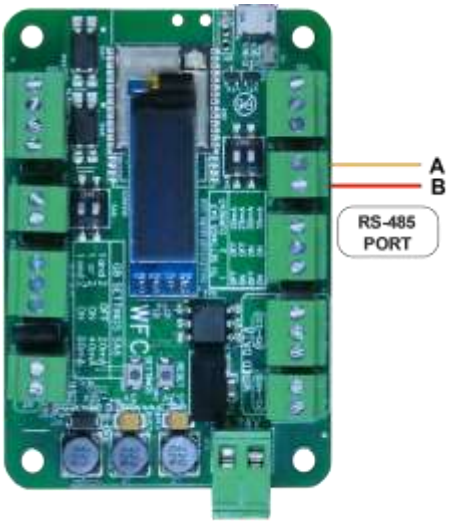
WFC communicator



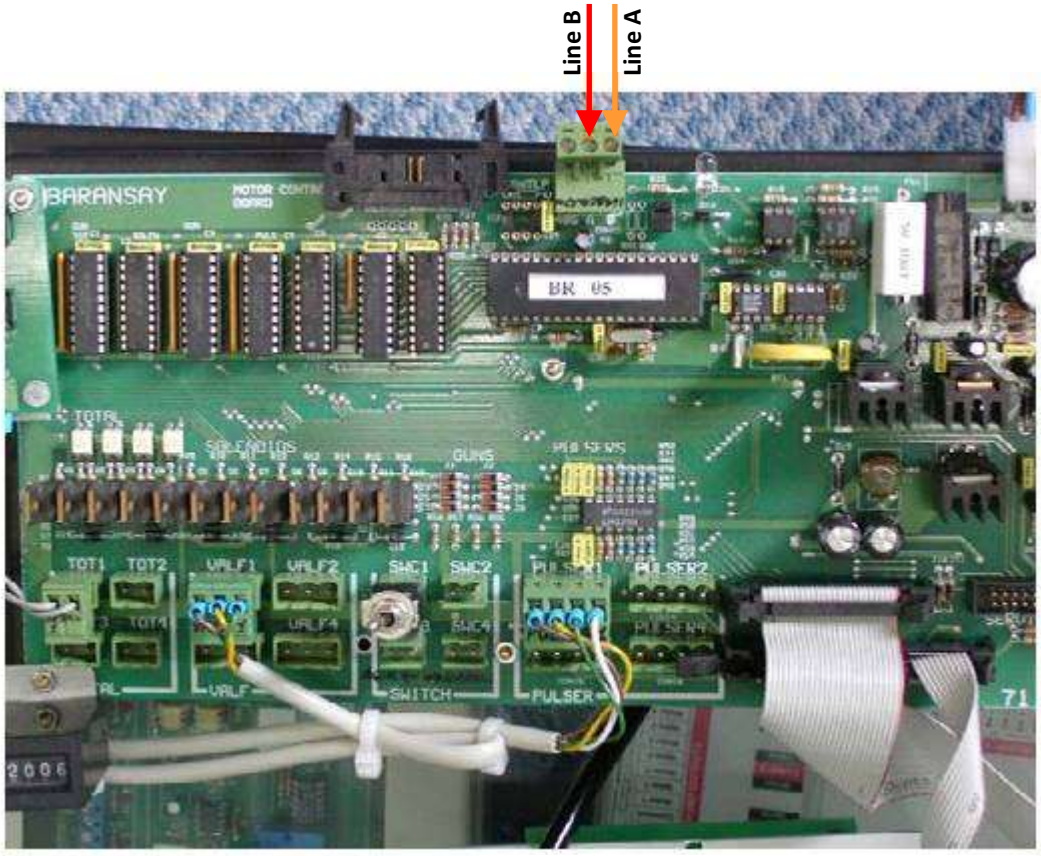
MEKSAN / WAYNE SU86 dispenser board

Baransay dispenser connection scheme

Connection to Baransay dispenser is made to RS-485 port:



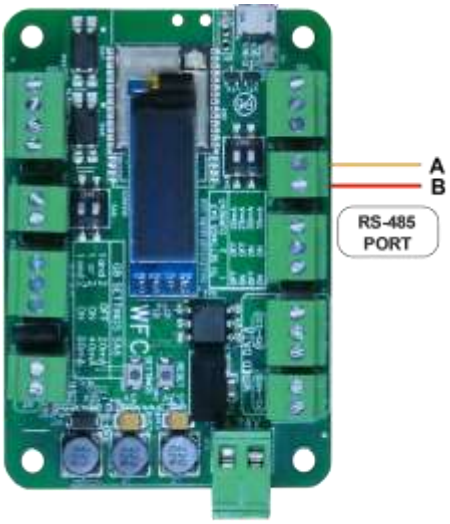
WFC communicator



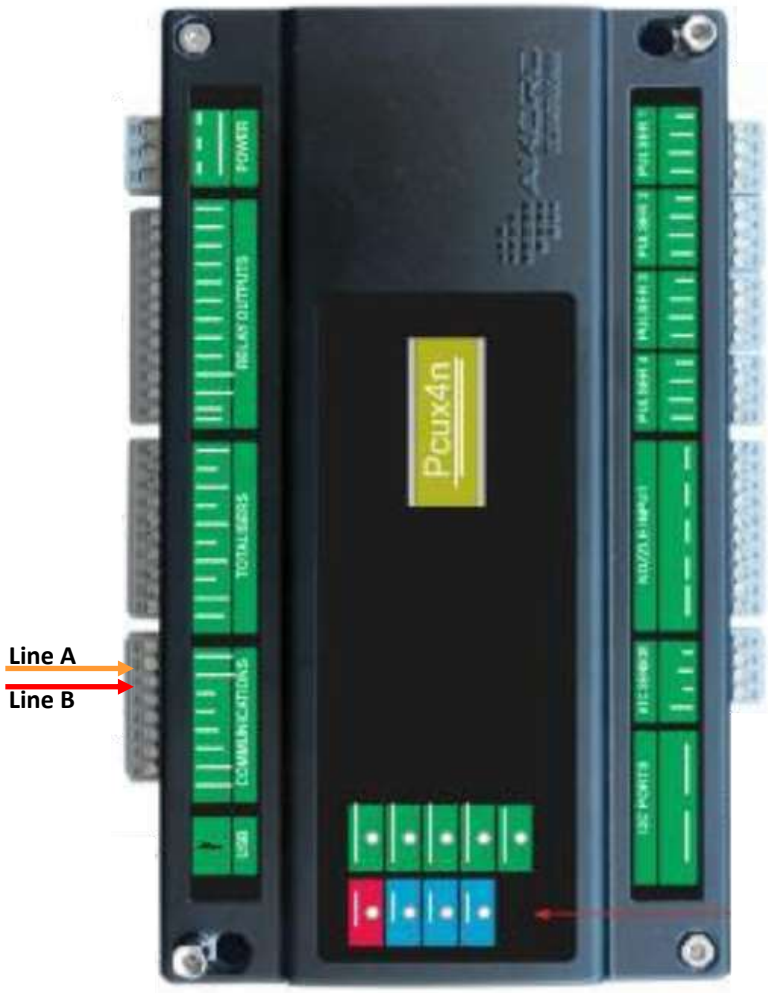
Baransay dispenser board

Durulsan dispenser connection scheme

Connection to Durulsan dispenser is made to RS-485 port:



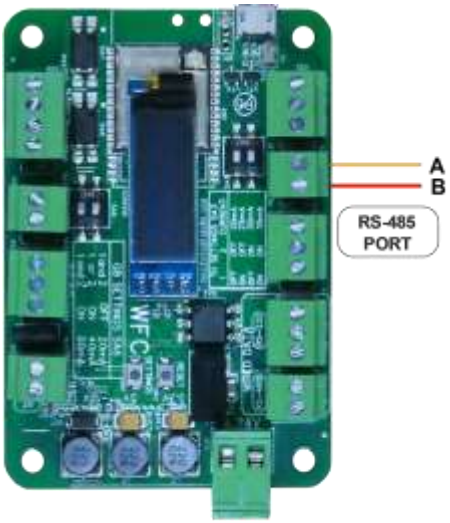
WFC communicator



Durulsan dispenser computer

2A LPG dispenser connection scheme

Connection to 2A dispenser is made to RS-485 port:

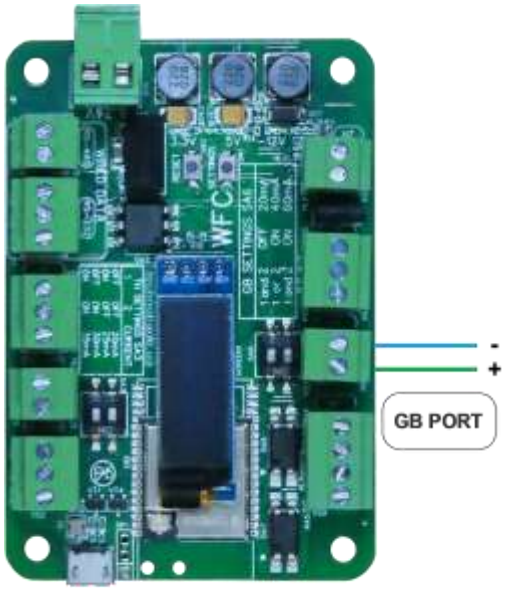


WFC communicator

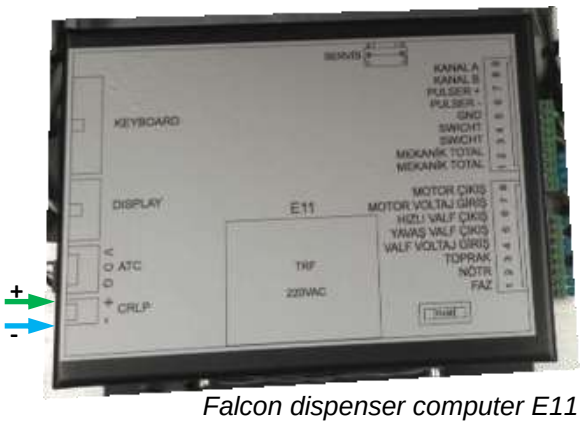
2A dispenser computer

Falcon dispenser connection scheme

Connection to Falcon dispenser is made to GB port:



WFC communicator

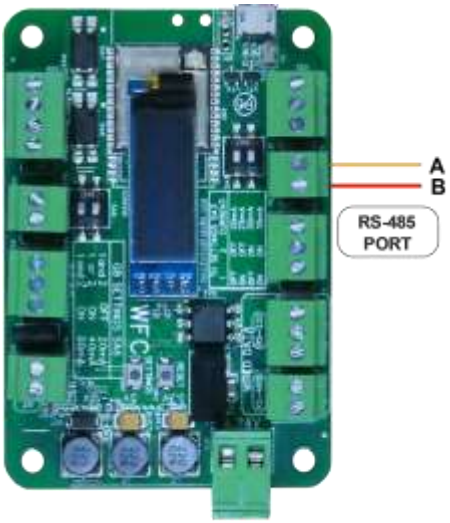


Falcon dispenser computer E11

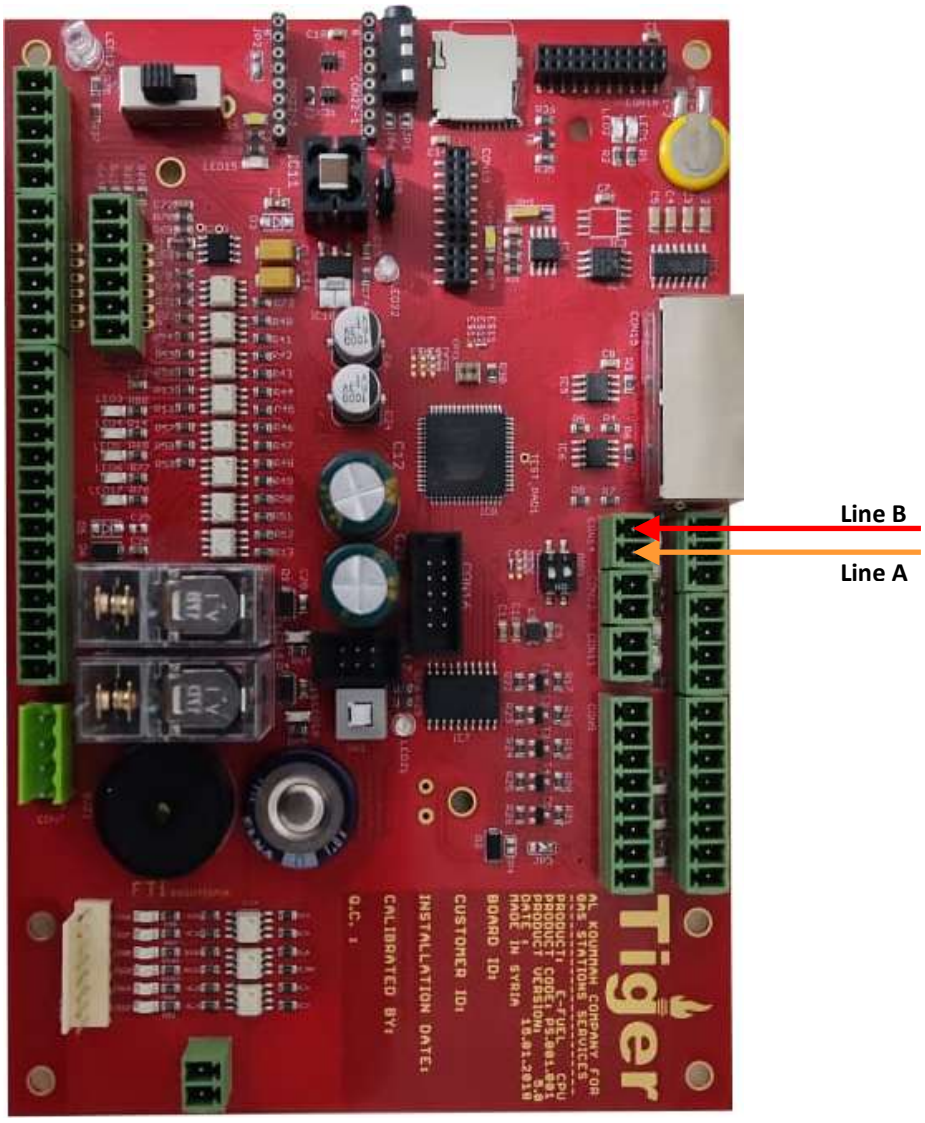
Falcon dispenser computer E22

Tiger dispenser connection scheme

Connection to Tiger dispenser is made to RS-485 port:



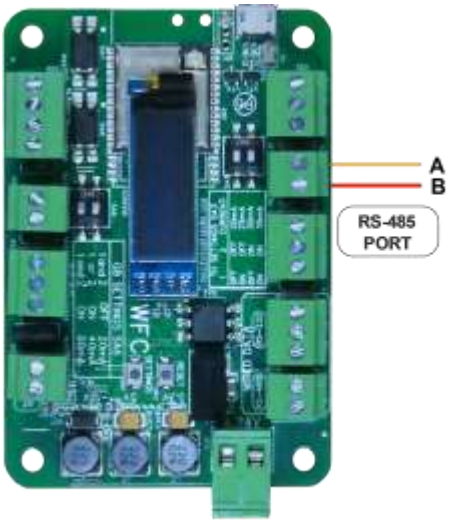
WFC communicator



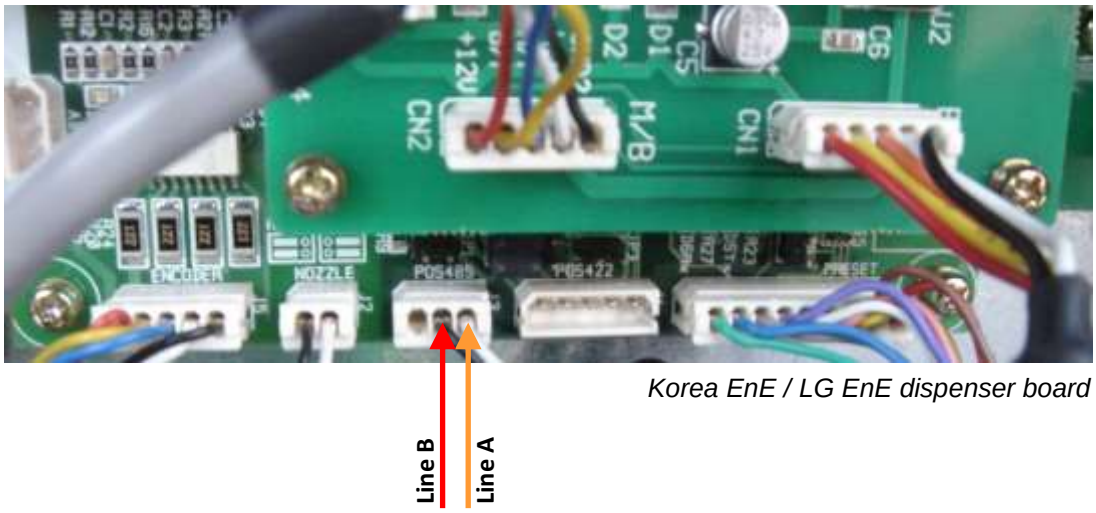
Tiger dispenser mainboard

Korea EnE (LG EnE) dispenser connection scheme

Connection to Korea EnE (LG EnE) dispenser is made to RS-485 port:



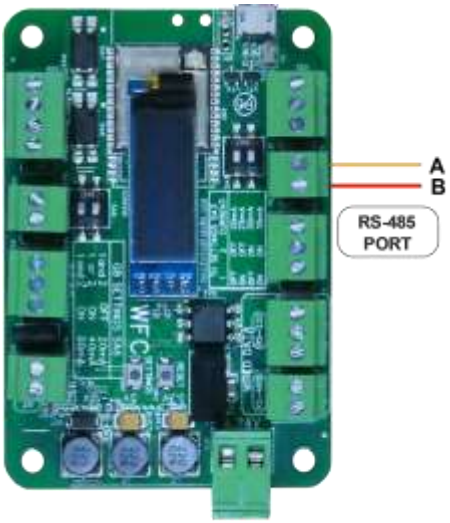
WFC communicator



Korea EnE / LG EnE dispenser board

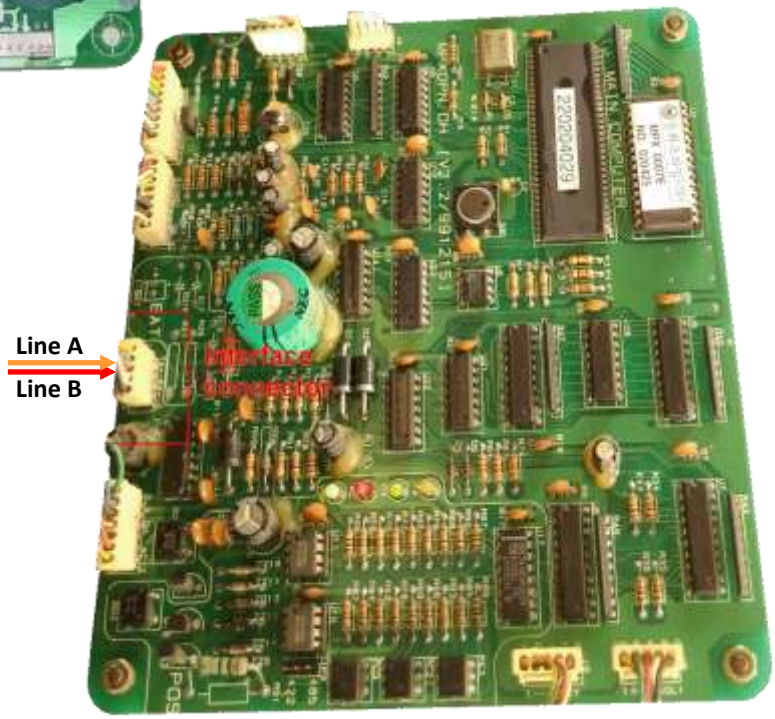
Dong Hwa Prime dispenser connection scheme

Connection to Dong Hwa dispenser is made to RS-485 port:



WFC communicator

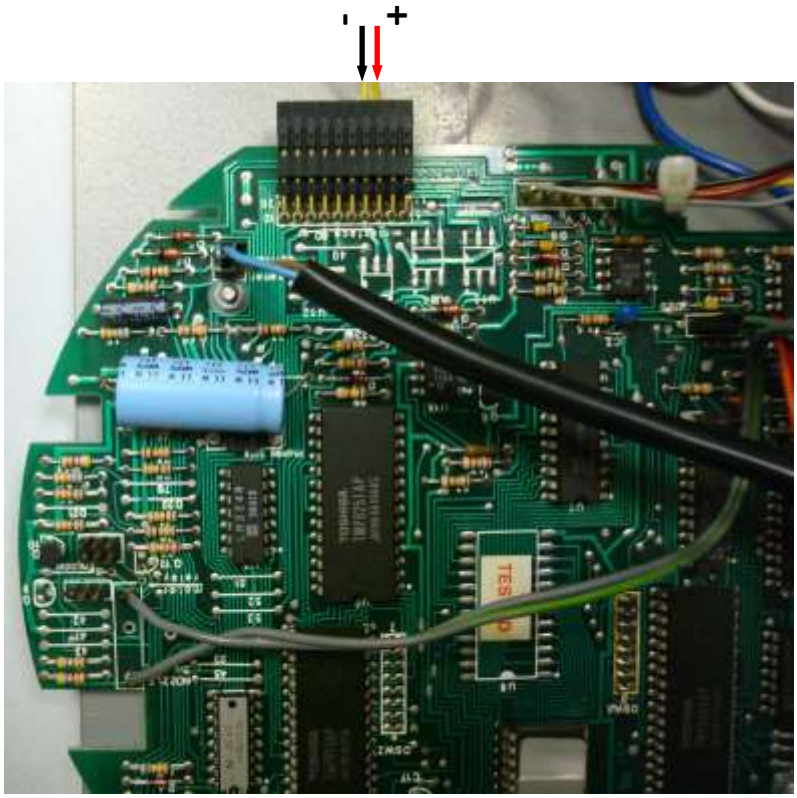
Dong Hwa dispenser board



Dong Hwa dispenser board

Gallagher (PEC) dispenser connection scheme

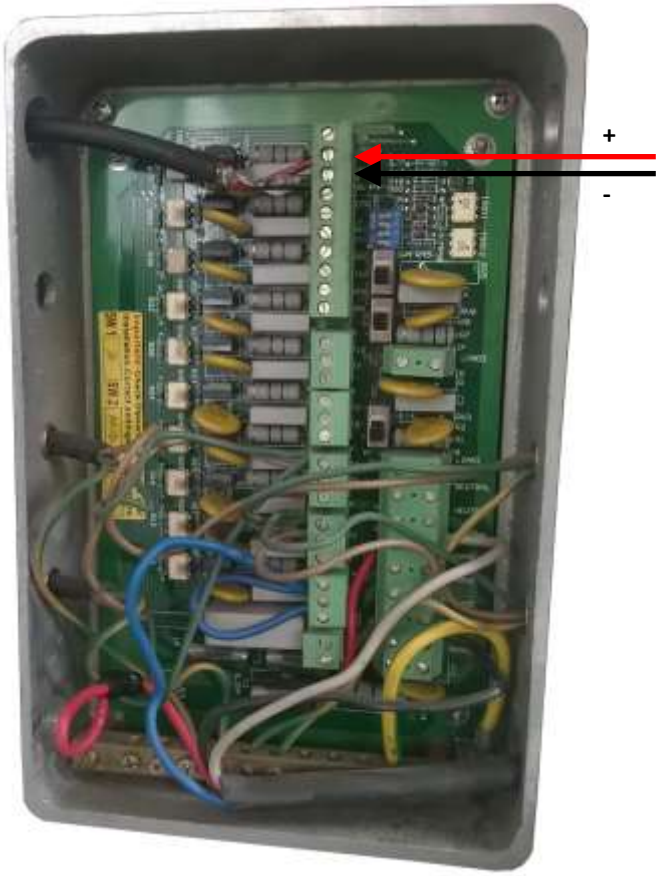
Connection to PEC dispenser is made to NZ port:



Retron 80 dispenser board connection

Compac dispenser connection scheme

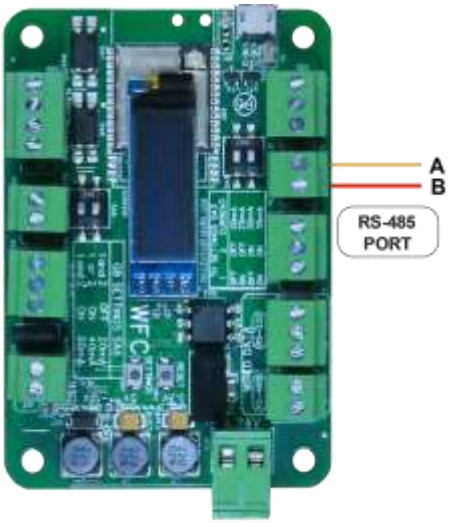
Connection to Compac dispenser is made to NZ port:



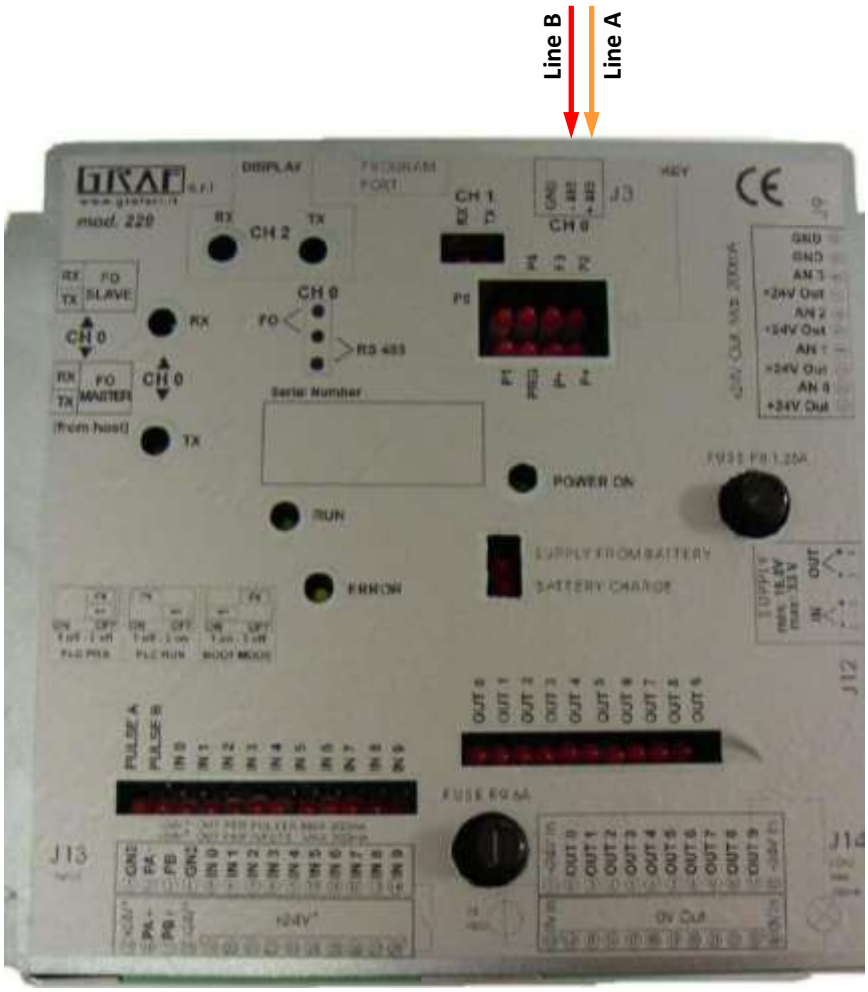
Compac dispenser junction box

Safe dispenser connection scheme

Connection to SAFE dispenser is made using RS-485 interface:



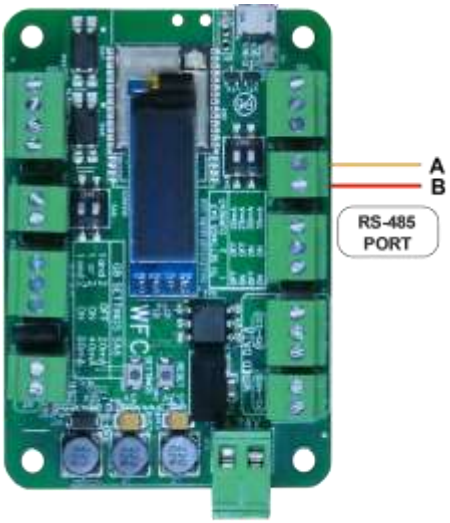
WFC communicator



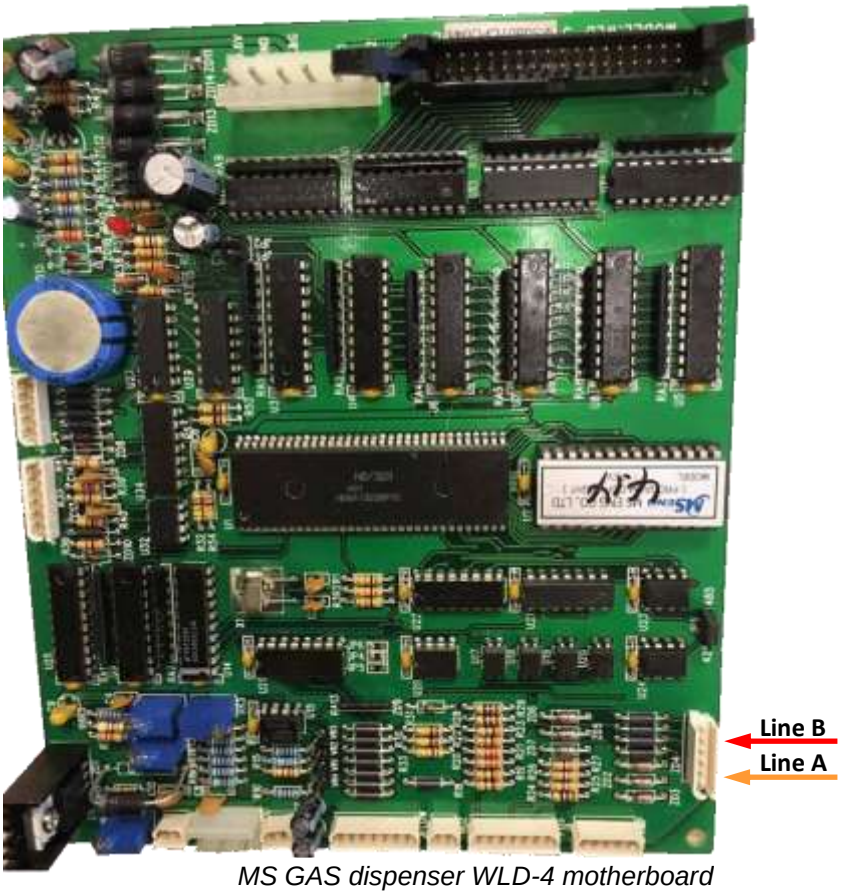
SAFE Graf electronic head PMII

MS Gas dispenser connection scheme

Connection to MS GAS dispenser is made using RS-485 interface:



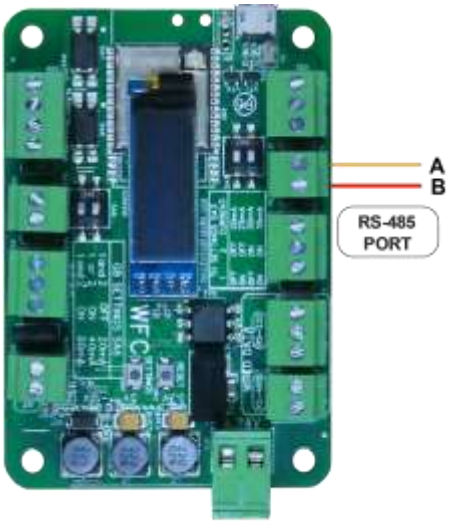
WFC communicator



MS GAS dispenser WLD-4 motherboard

Shibata dispenser connection scheme

Connection to SHIBATA dispenser is made using RS-485 interface:

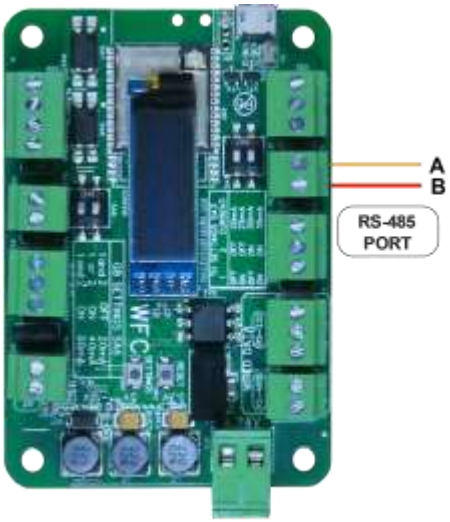


WFC communicator

SHIBATA dispenser motherboard

Aspro Develco dispenser connection scheme

Connection to Aspro Develco dispenser is made using RS-485 interface:

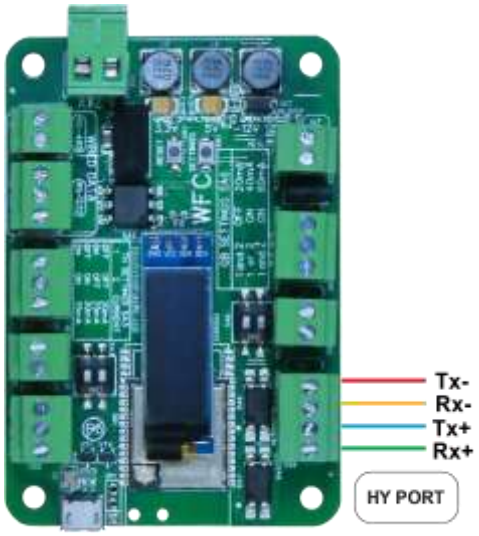


WFC communicator

Develco dispenser motherboard

HongYang dispenser connection scheme

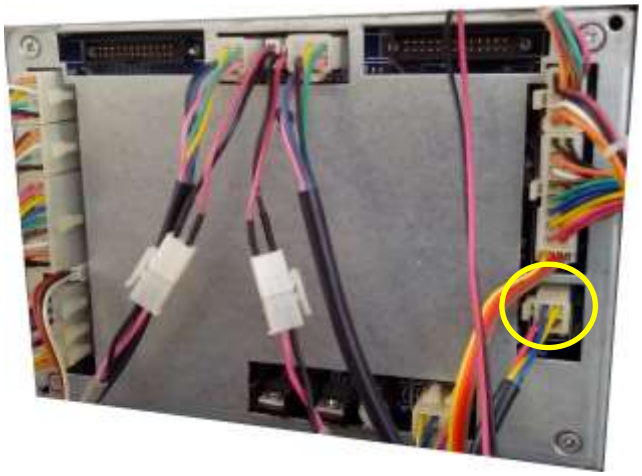
Connection to HongYang dispenser is made to HY port:

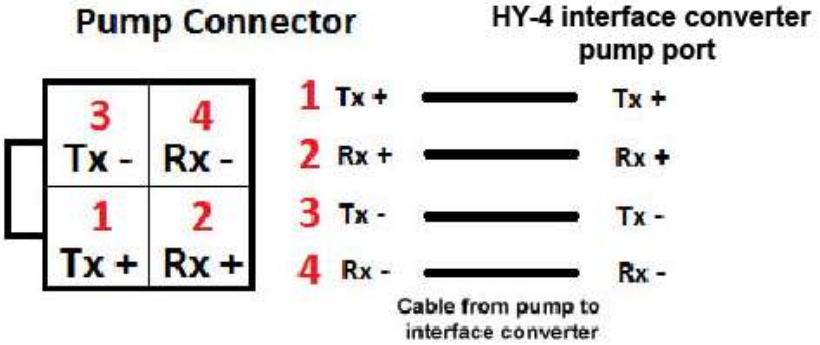


WFC communicator

HongYang dispenser calculator

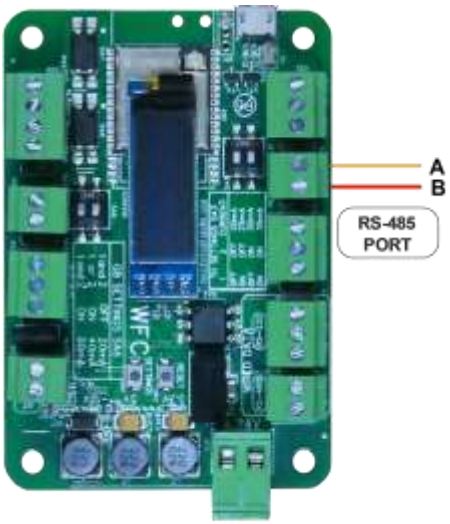
HongYang dispenser calculator





Lanfeng dispenser connection scheme

Connection to Lanfeng dispenser is made to RS-485 port:



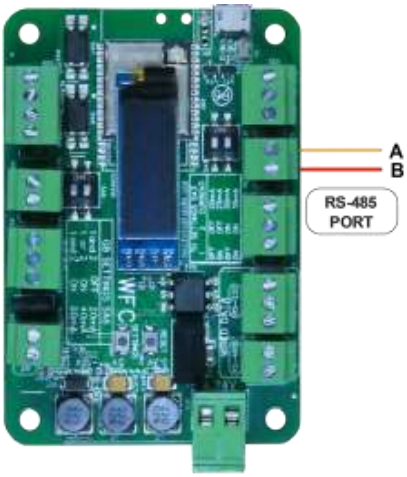
WFC communicator

Lanfeng RS-485 dispenser board

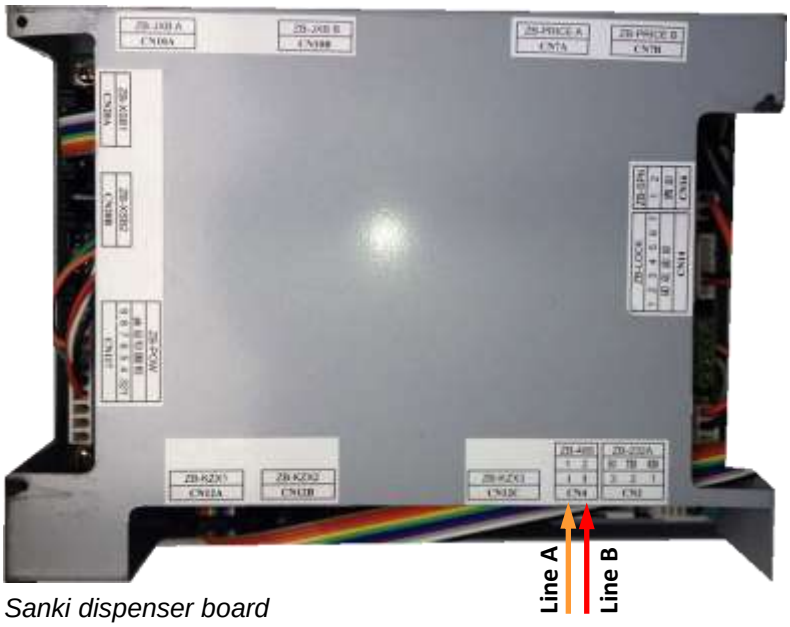
Lanfeng RS-485 dispenser board

Sanki dispenser connection scheme

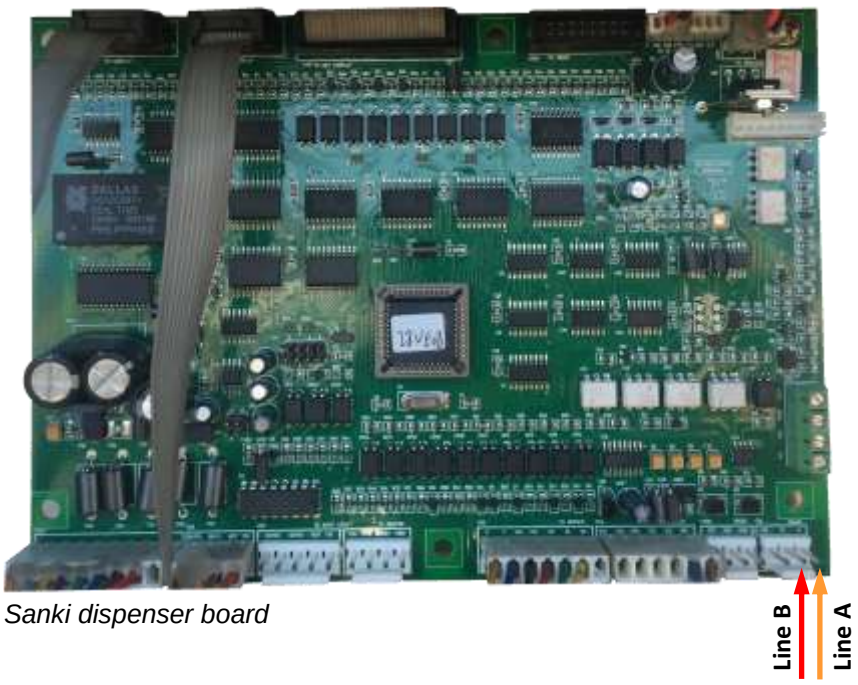
Connection to Sanki dispenser is made to RS-485 port:



WFC communicator

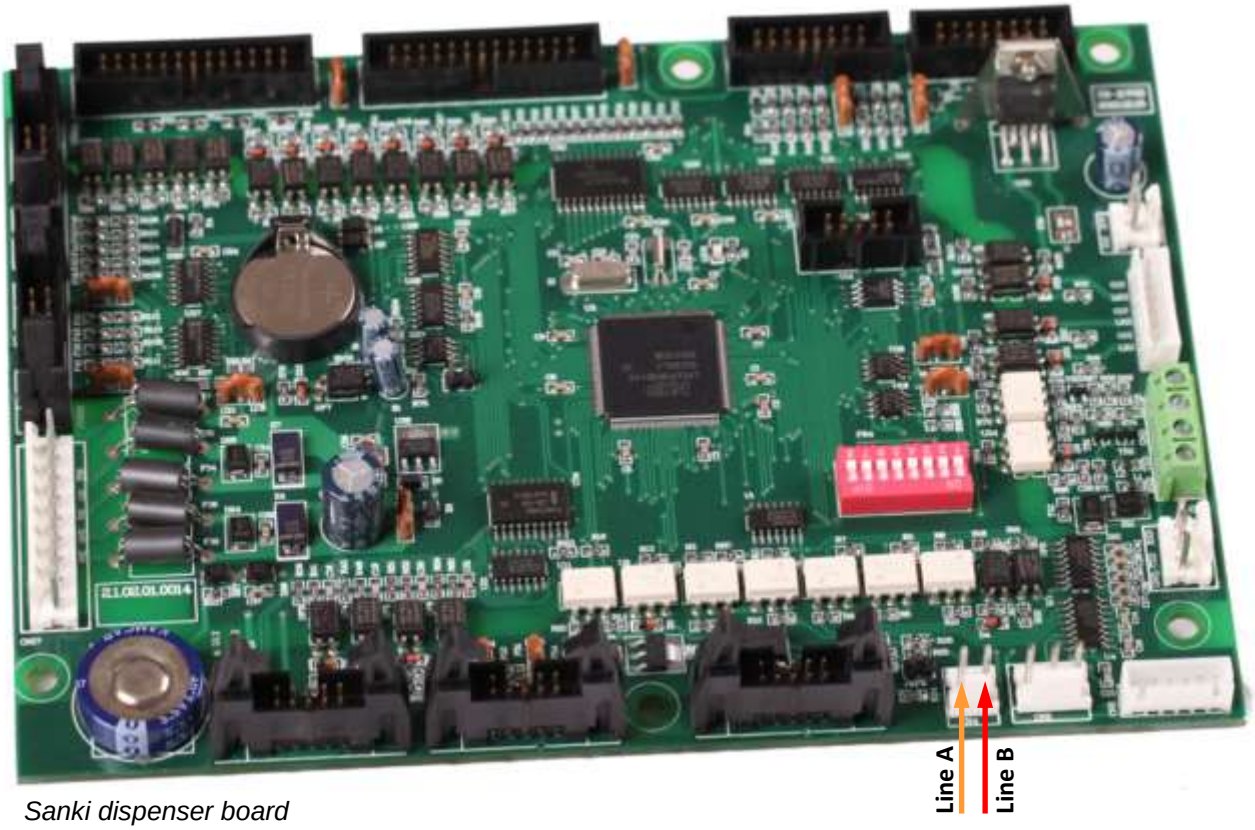


Sanki dispenser board



Sanki dispenser board

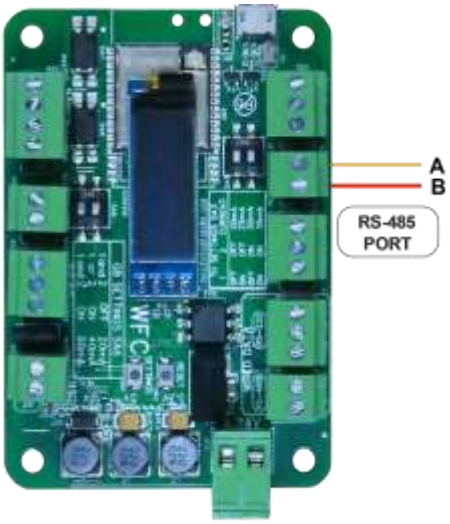
Sanki dispenser I2 board



Sanki dispenser board

Datian Machines dispenser connection scheme

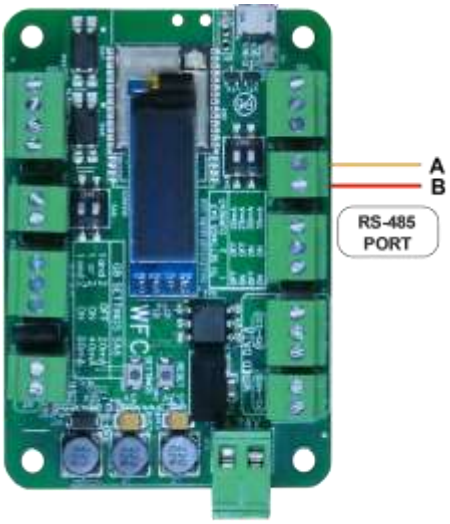
Connection to Datian Machines dispenser is made to RS-485 port:



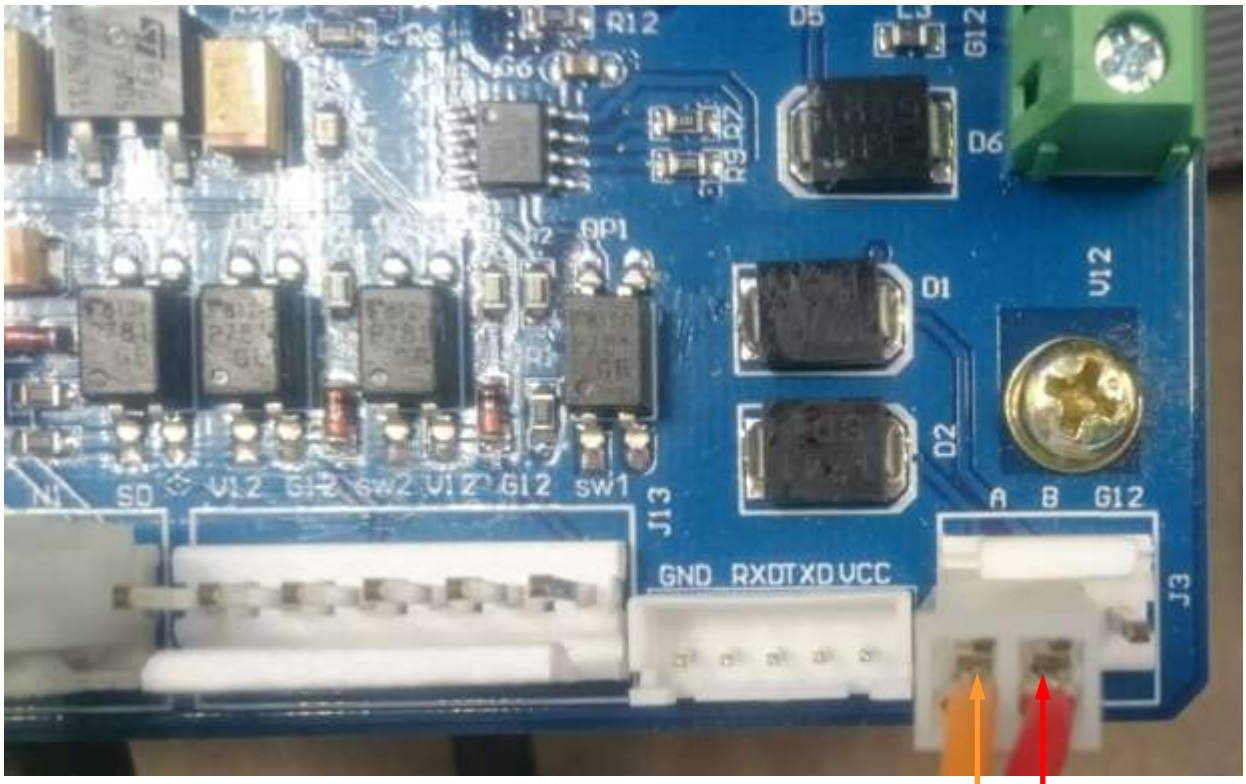
Datian Machines dispenser interface board

Eaglestar dispenser connection scheme

Connection to Eaglestar dispenser is made to RS-485 port:



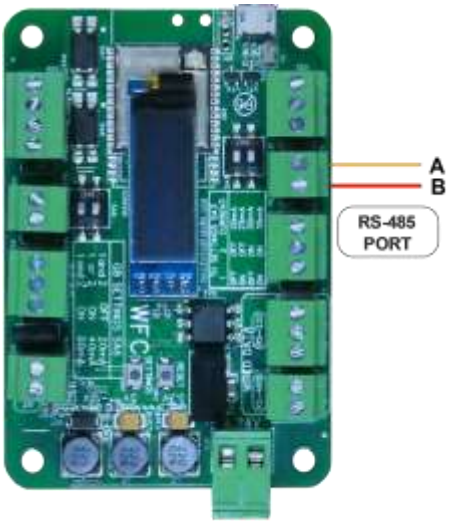
WFC communicator



Eaglestar dispenser mainboard

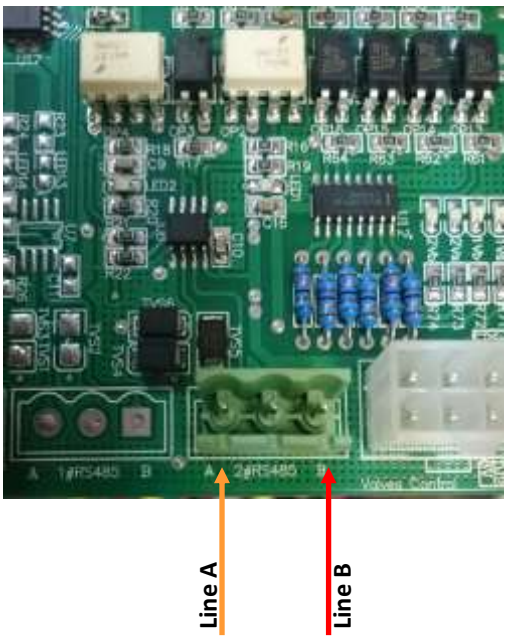
Blue Sky dispenser connection scheme

Connection to Blue Sky dispenser is made to RS-485 port:



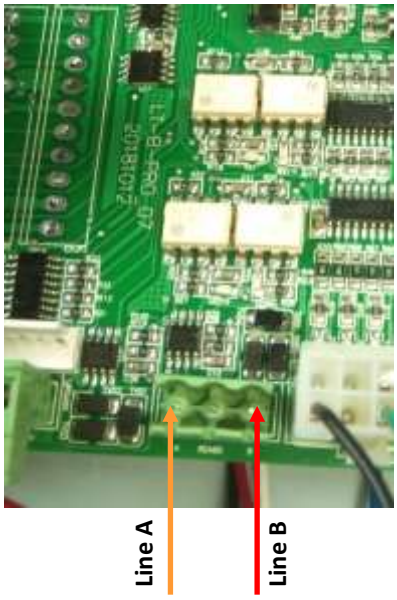
WFC communicator

Blue Sky LT-B dispenser board



Blue Sky LT-L/LT-LG dispenser board

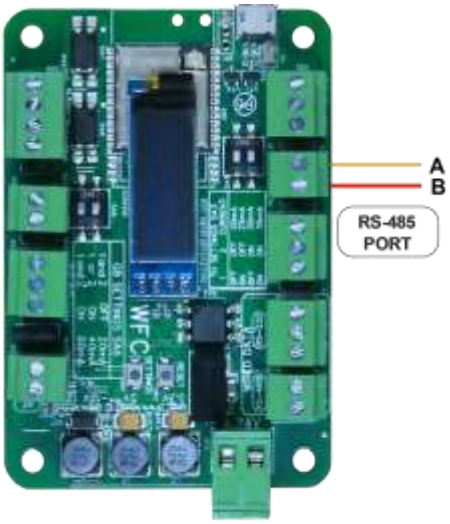
Blue Sky LT-C/LT-H dispenser board



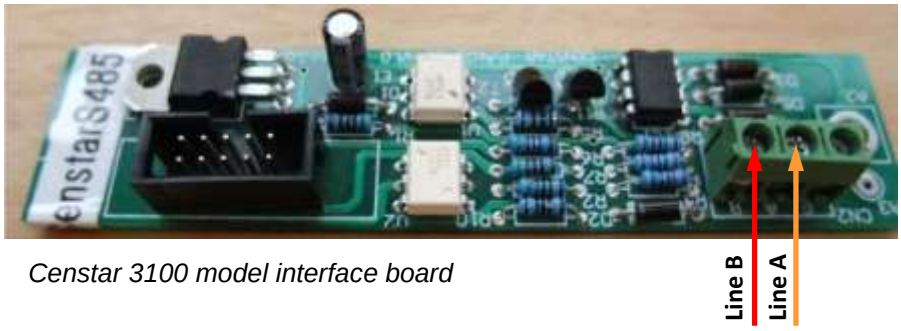
Blue Sky LT-B Pro dispenser board

Censtar dispenser connection scheme

Connection to Censtar dispenser is made to RS-485 port:



WFC communicator

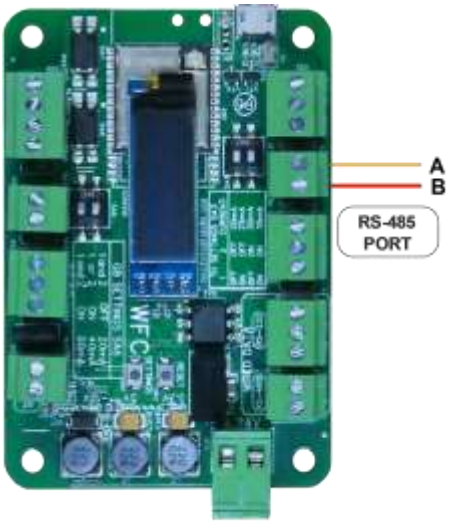


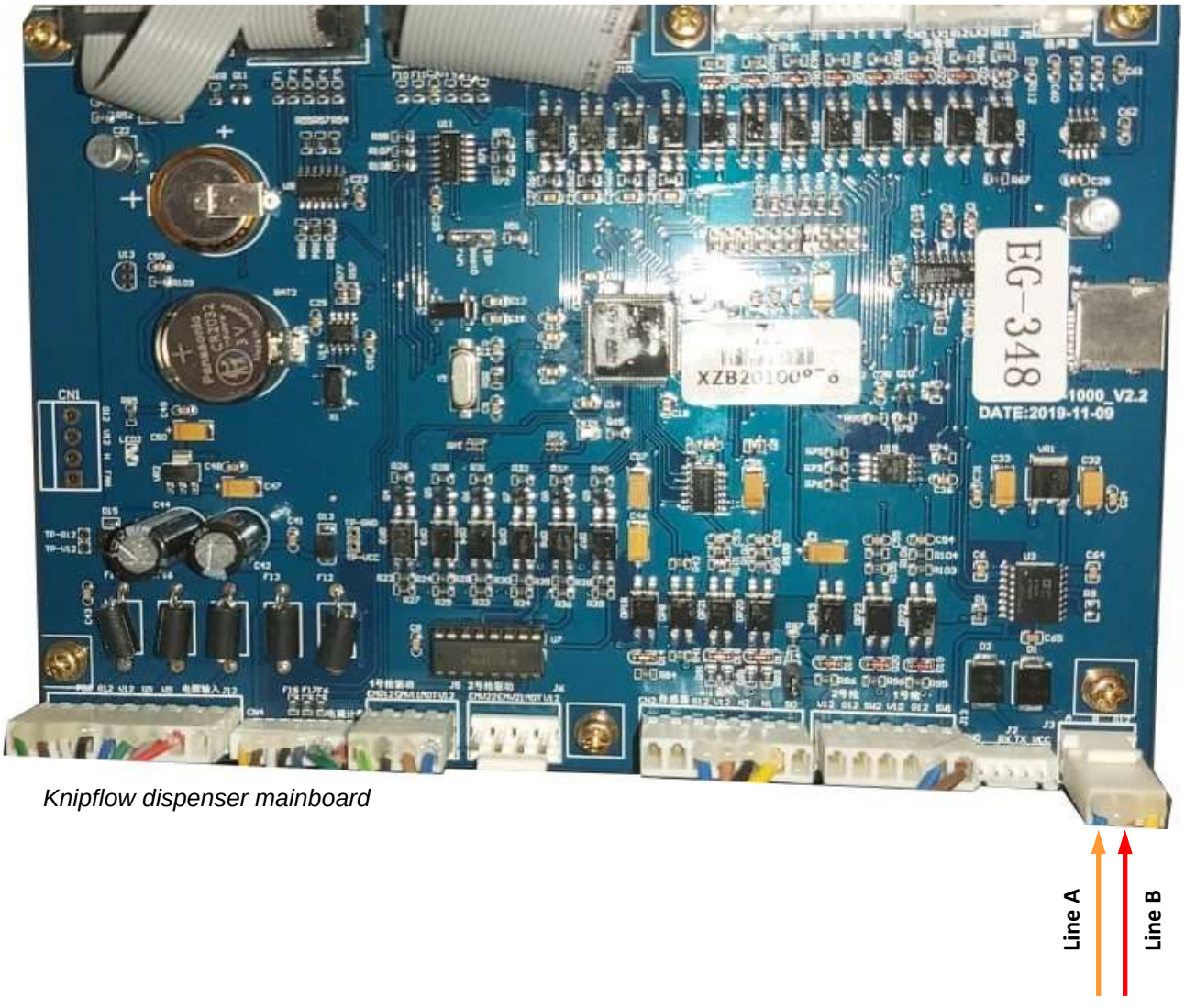
Censtar 3100 model interface board

Censtar 6200 model interface board

Knipflow dispenser connection scheme

Connection to Knipflow dispenser is made to RS-485 port:

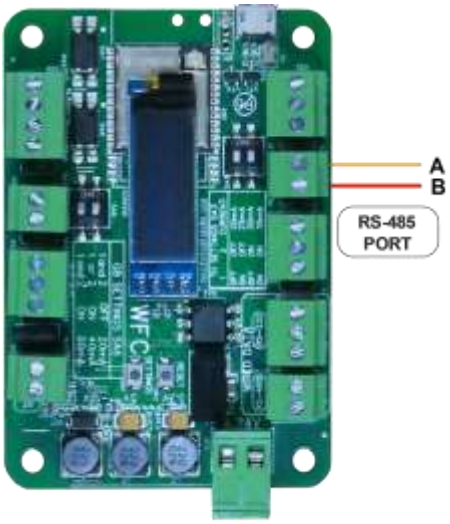




Knipflow dispenser mainboard

Changlong dispenser connection scheme

Connection to Changlong dispenser is made to RS-485 port:

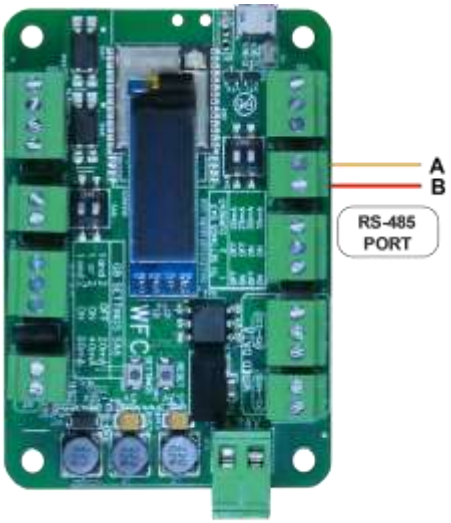


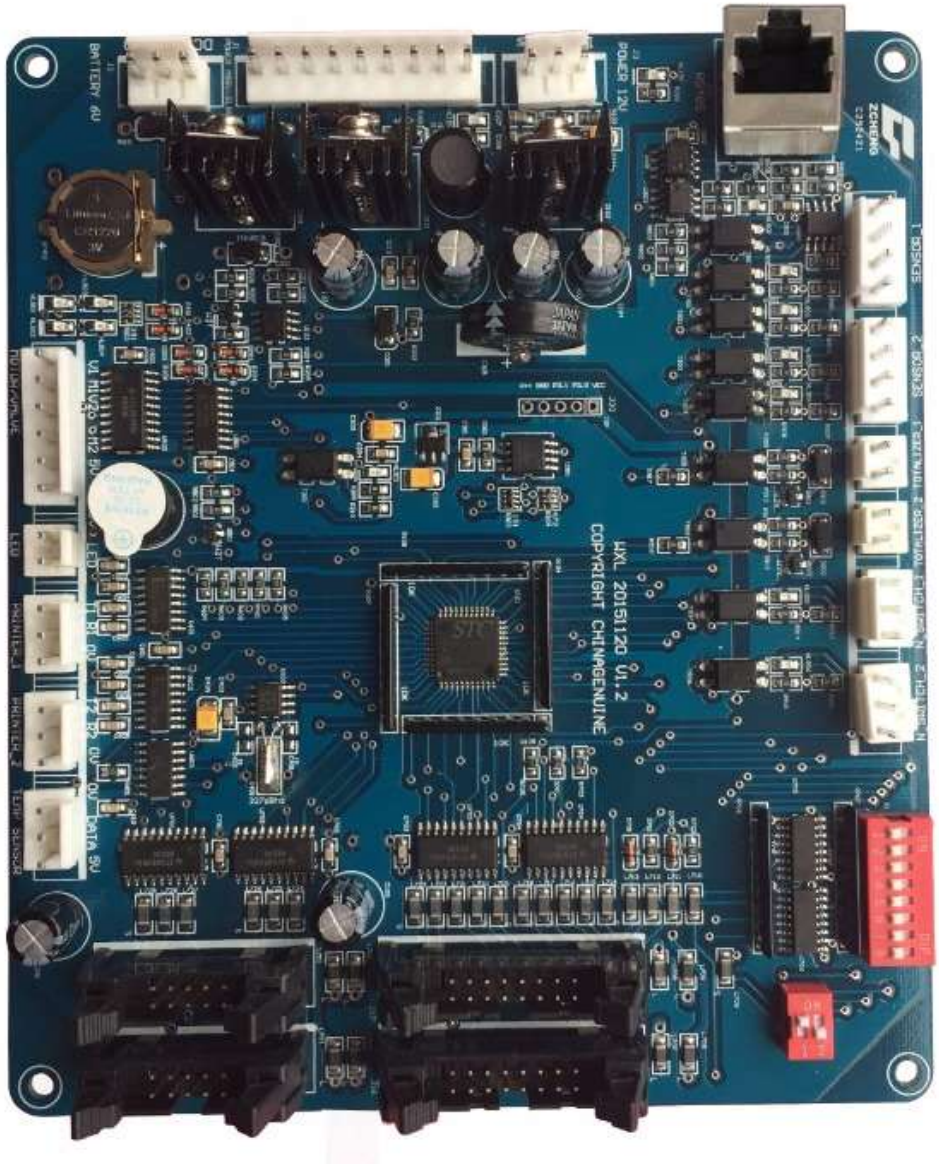
WFC communicator

Changlong dispenser interface boardboard

Zcheng Genuine Machines dispenser connection scheme

Connection to Zcheng Genuine Machines dispenser is made to RS-485 port:

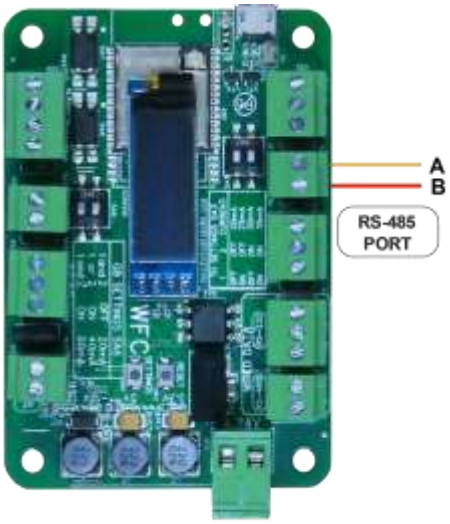




Zcheng Genuine dispenser interface boardboard

Bailong dispenser connection scheme

Connection to Bailong dispenser is made to RS-485 port:

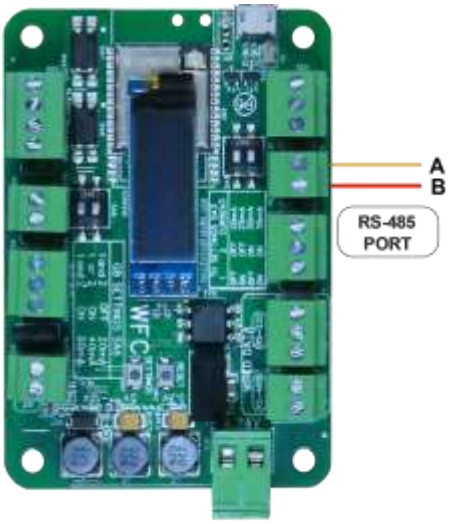


WFC communicator

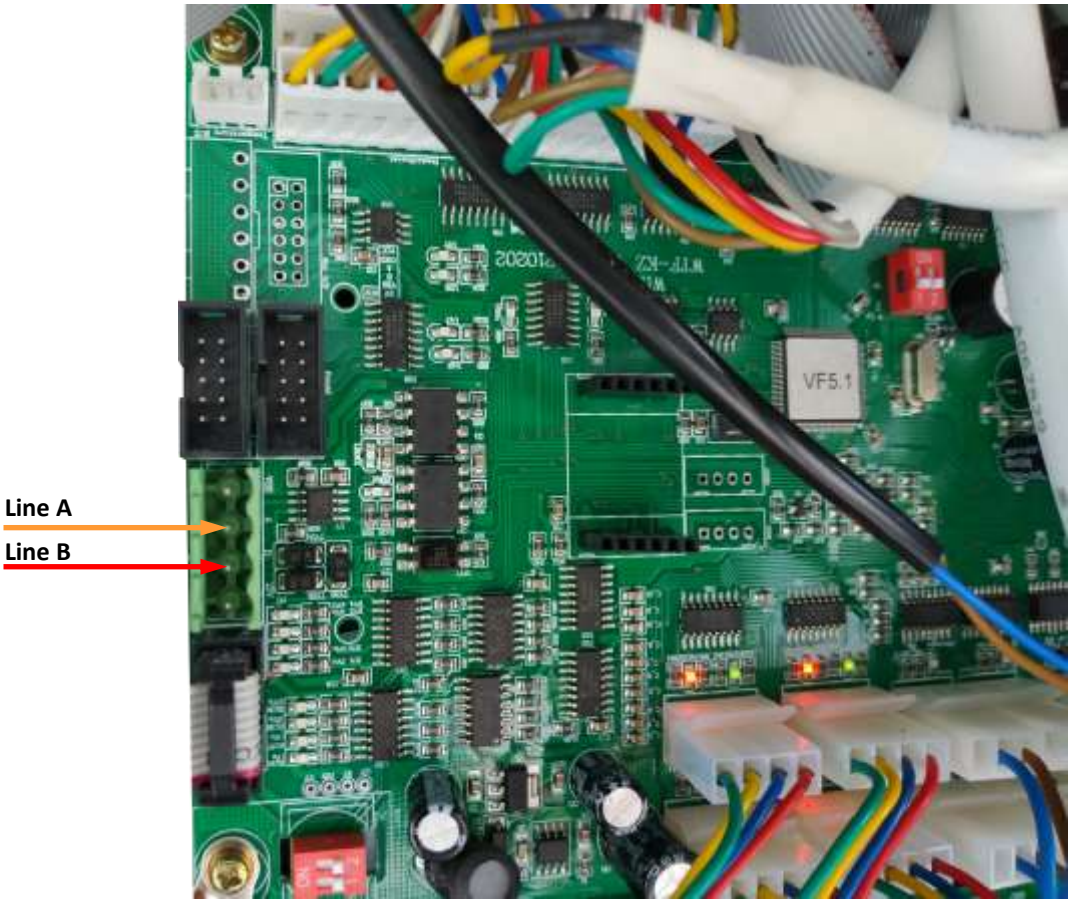
Bailong dispenser board

Ecotec dispenser connection scheme

Connection to Ecotec dispenser is made to RS-485 port:

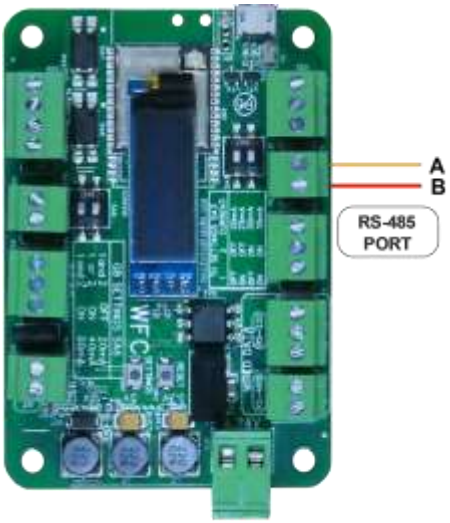


WFC communicator

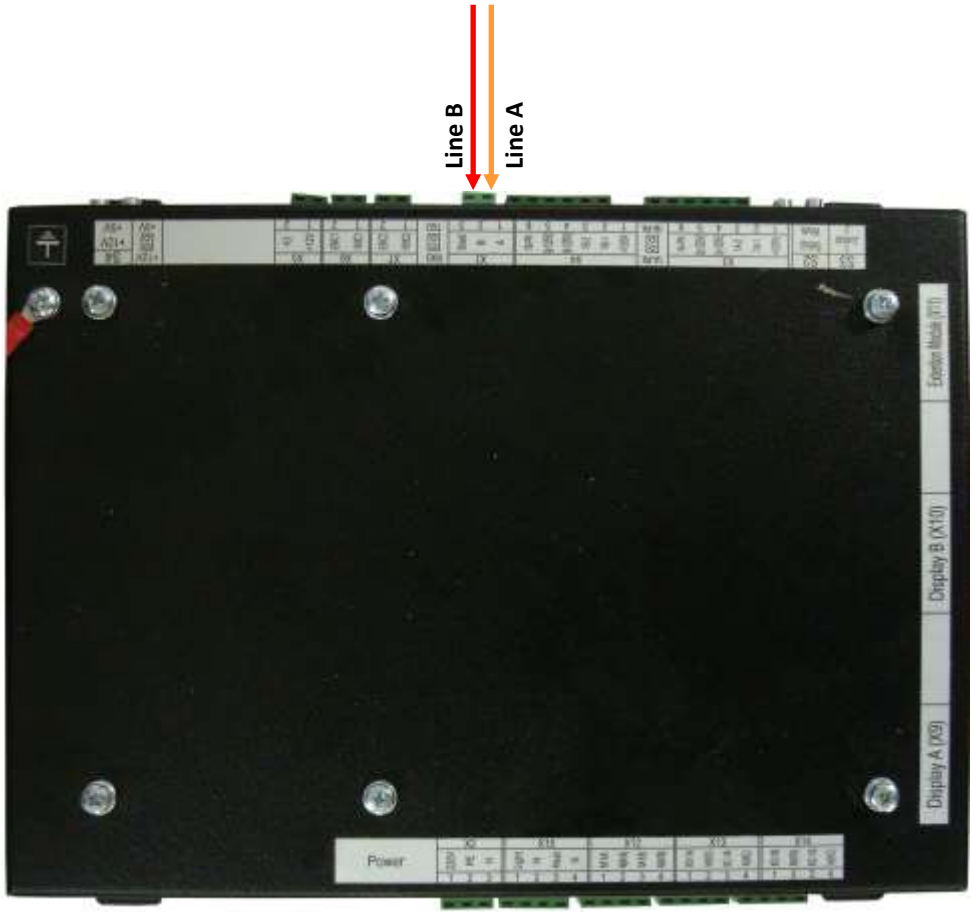


Topaz dispenser connection scheme

Connection to TOPAZ dispenser is made to RS-485 port:



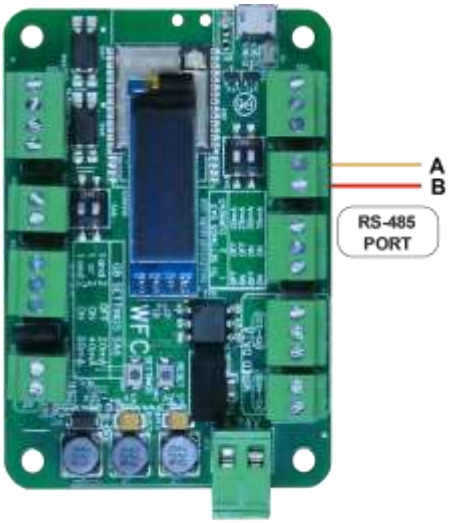
WFC communicator



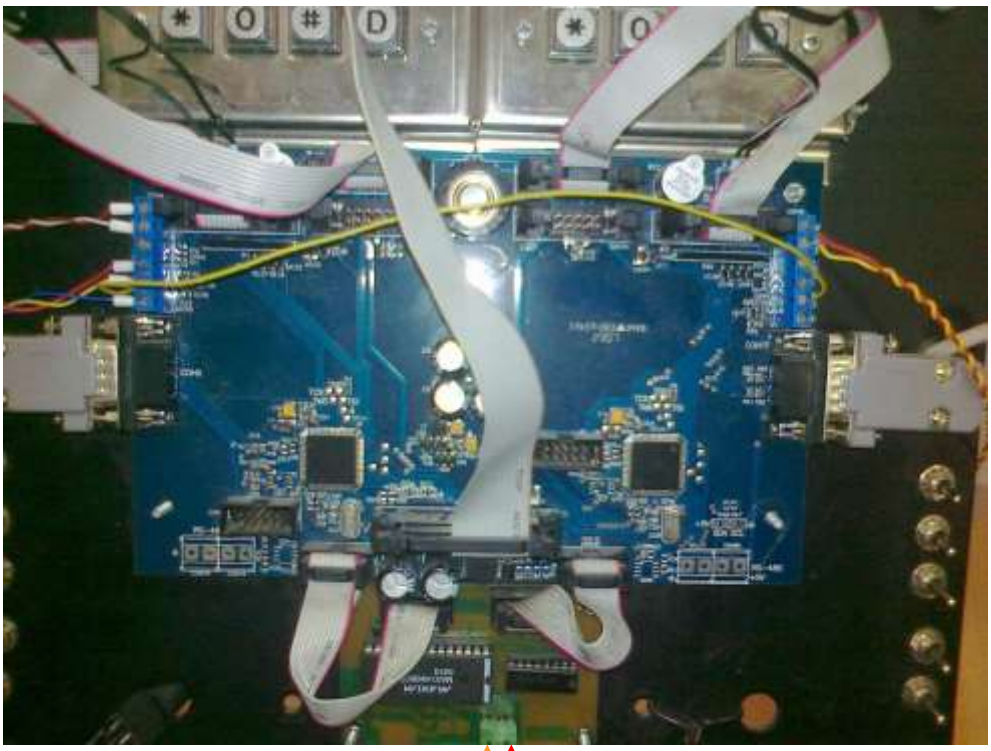
Topaz dispenser system board

Shelf dispenser connection scheme

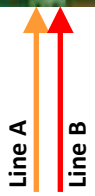
Connection to SHELF dispenser is made to RS-485 port:



WFC communicator

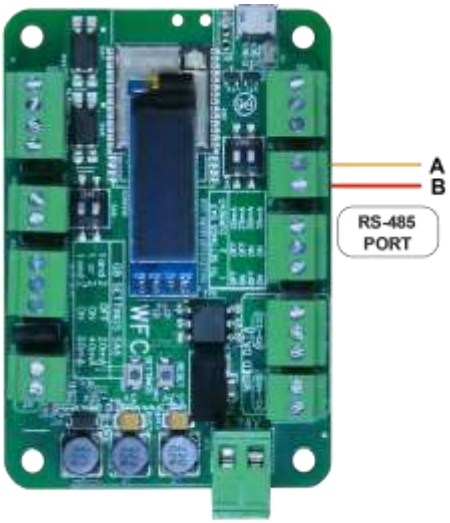


Shelf dispenser system board



UniCon dispenser connection scheme

Connection to UniCon dispenser is made to RS-485 port:



WFC communicator

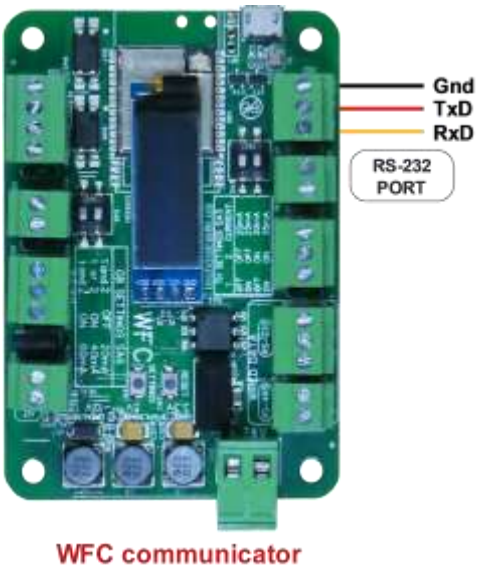
UniCon dispenser system board

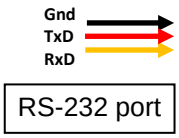
EXAMPLES OF CONNECTION TO ATG SYSTEMS

Below sections show examples of connection to various brands of probes and ATG systems. This information is provided as an example. For obtaining of detailed information on connection to various brands of ATG systems and probe, their configuration and configuration of PTS-2 controller please refer to our support page *https://www.technotrade.ua/support.*

Gilbarco Veeder Root TLS consoles connection scheme

Connection to Gilbarco Veeder Root TLS system is made to RS-232 port:

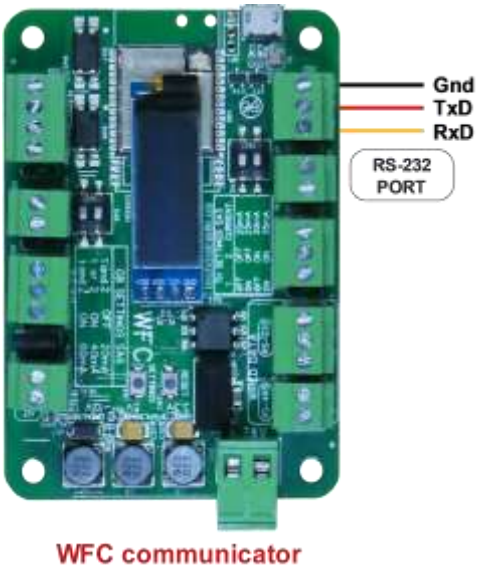


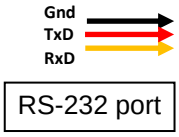


Gilbarco Veeder Root TLS ATG console

Start Italiana console connection scheme

Connection to Start Italiana console is made to RS-232 port:

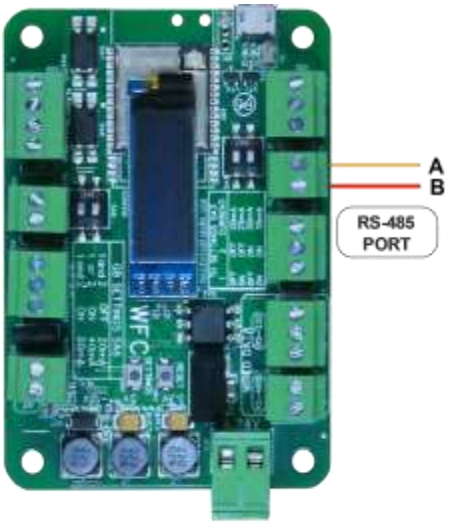




Start Italiana ATG console

Start Italiana wired probes connection scheme

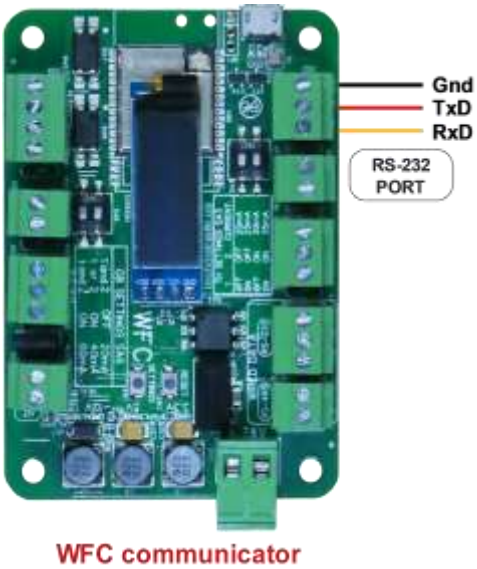
Connection to Start Italiana wired probes is to RS-485 port (connection is made through an intrinsic safety barrier):



Start Italiana probe (RS-485)

Start Italiana wireless probes connection scheme

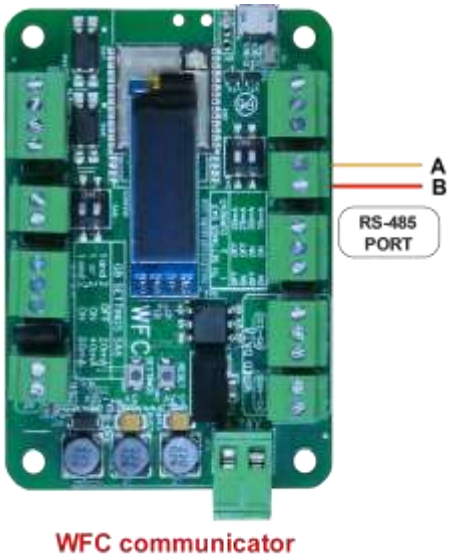
Connection to Start Italiana wireless probes is to RS-232 port:



Start Italiana wireless repeater

Alisonic wired probes connection scheme

Connection to Alisonic wired probes is made to RS-485 port (connection is made through an intrinsic safety barrier):

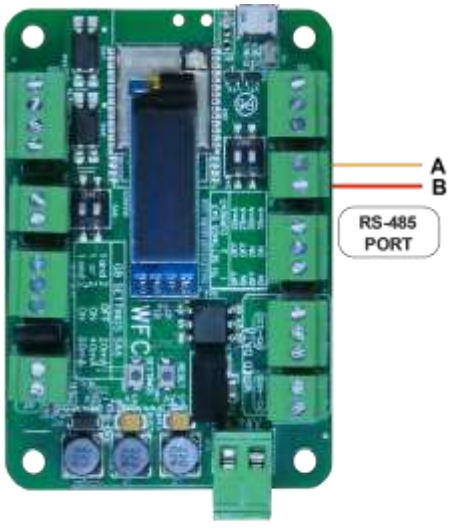


WFC communicator

Alisonic probe (RS-485)

Alisonic wireless probes connection scheme

Connection to Alisonic wireless probes is made through Alisonic wireless receiver to RS-485 port:

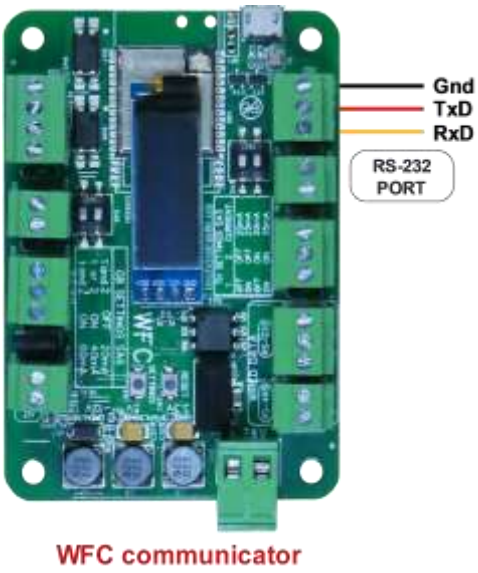


WFC communicator

Alisonic wireless receiver

Struna ATG system connection scheme

Connection to Struna system is made to RS-232 port:

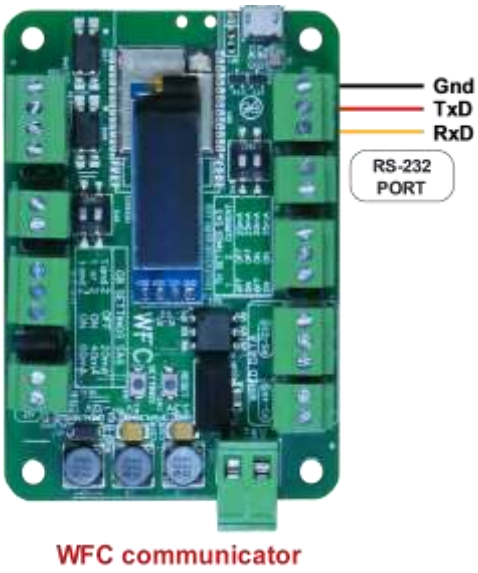


WFC communicator

Struna ATG calculation unit

OPW Site Sentinel ATG system connection scheme

Connection to OPW system is made to RS-232 port:

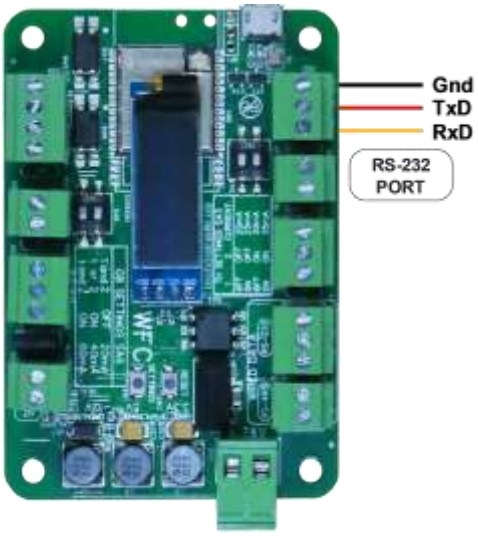


WFC communicator

OPW ATG console

Colibri ATG system connection scheme

Connection to Colibri system is made to RS-232 port:

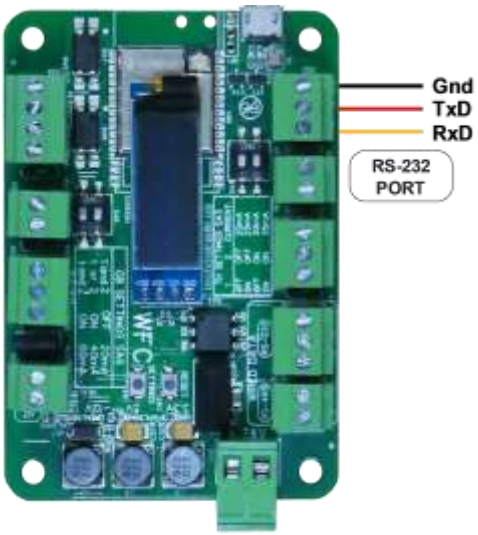


WFC communicator

Colibri ATG console

Fafnir ATG system connection scheme

Connection to FAFNIR system is made to RS-232 port:

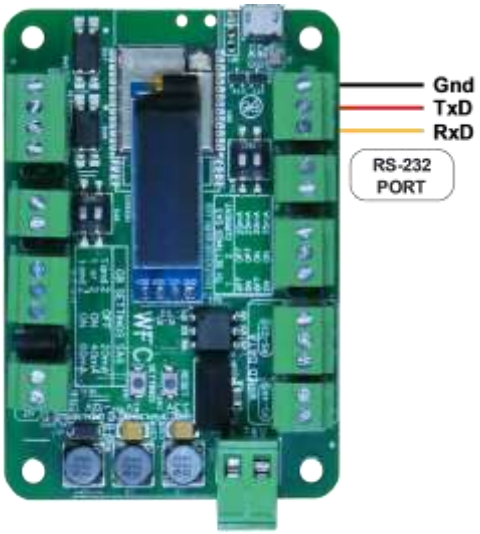


WFC communicator

FAFNIR-Command ATG console

Hectronic ATG probes connection scheme

Connection to Hectronic probes is to RS-232 port to Hectronic OptiLevel Supply box.

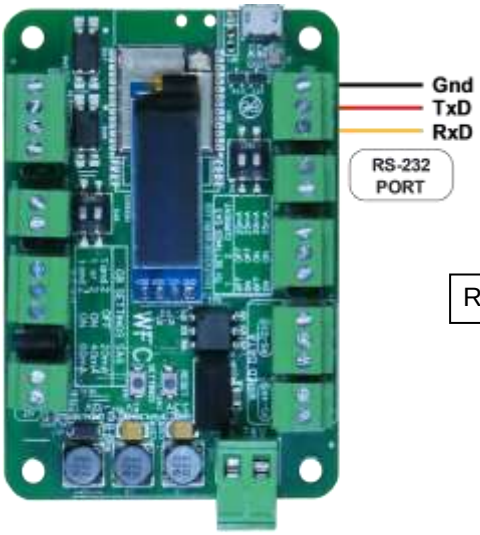


WFC communicator

Hectronic OptiLevel Supply box

Vega radar level meters

Connection to VEGA meters is to RS-232 port through a VEGAMET box.



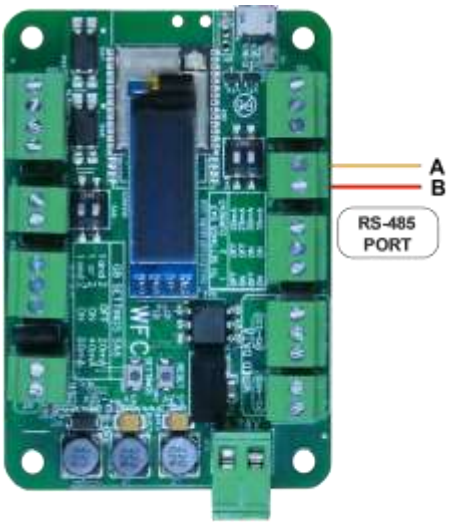
WFC communicator

VEGAMET signal conditioning instrument

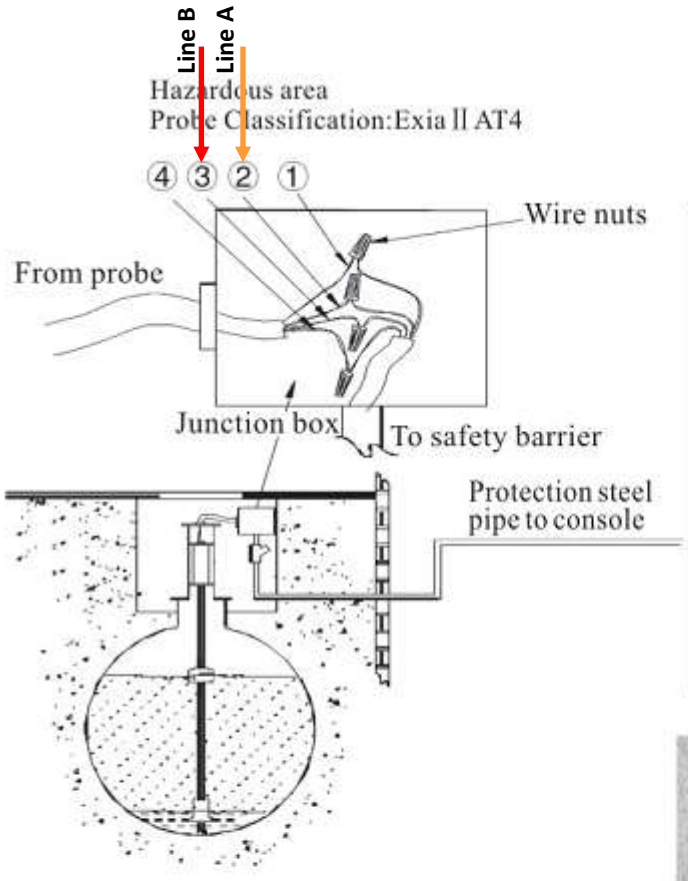
VEGAPULS radar meter

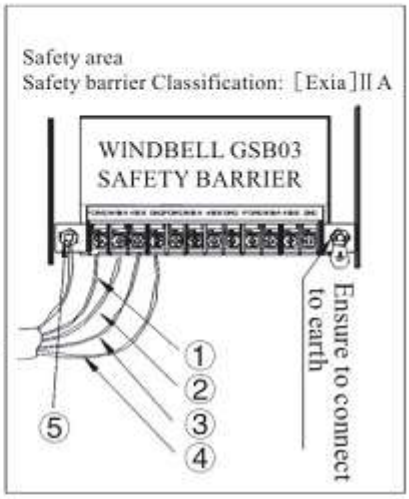
Windbell magnetostrictive probes connection scheme

Connection to Windbell probes is made to RS-485 port (connection is made through an intrinsic safety barrier):

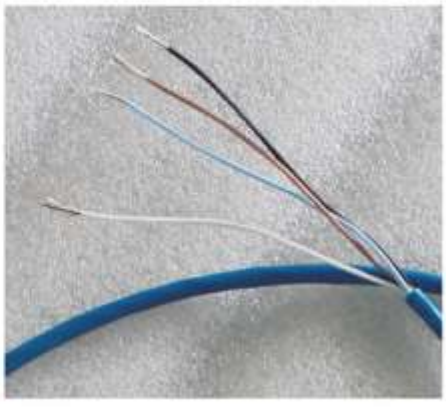


WFC communicator



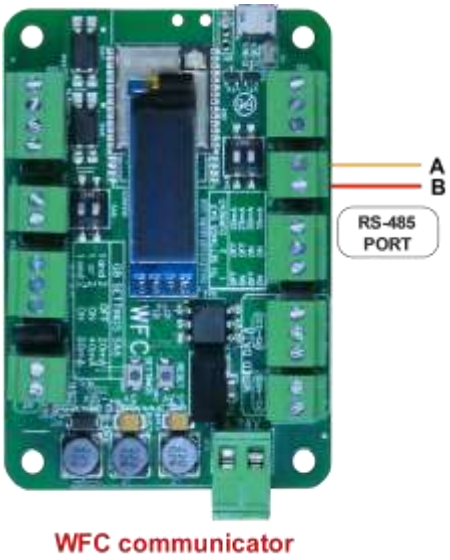


No.	Power wires	Port of safety barrier
①	Blue wire	Power (Power +)
②	Brown wire	485A
③	White wire	485B
④	Black wire	GND (Power-)
⑤	Shielded wire	



North Falcon wired probes connection scheme

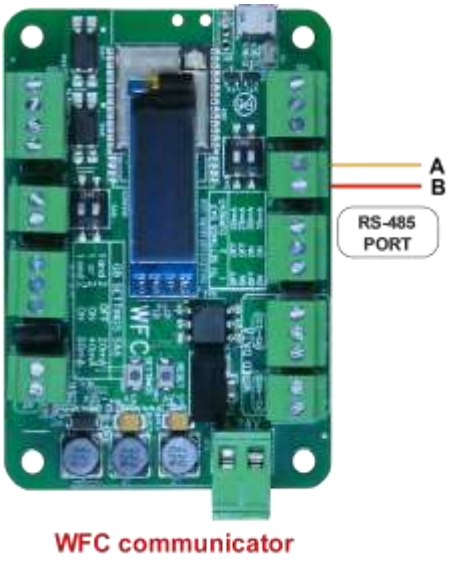
Connection to North Falcon wired probes is made to RS-485 port (connection is made through an intrinsic safety barrier):



North Falcon probe (RS-485)

North Falcon wireless probes connection scheme

Connection to North Falcon wireless probes is made through North Falcon wireless receiver to RS-485 port:



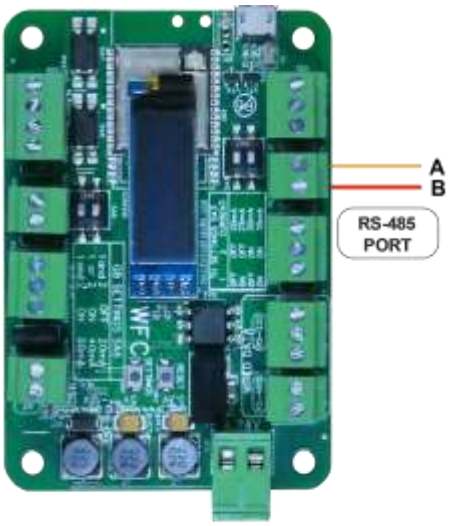
North Falcon wireless receiver

EXAMPLES OF CONNECTION TO PRICE POLES

Below sections show examples of connection to various brands of price poles. This information is provided as an example. For obtaining of detailed information on connection to various brands of price poles, their configuration and configuration of PTS-2 controller please refer to our support page *https://www.technotrade.ua/support*.

PWM price poles connection scheme

Connection to PWM price poles is made to RS-485 port:

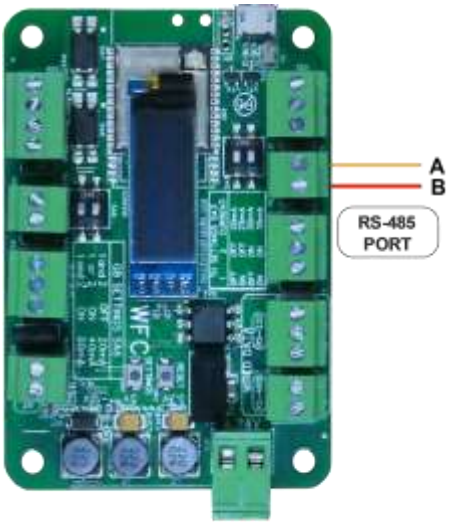


WFC communicator

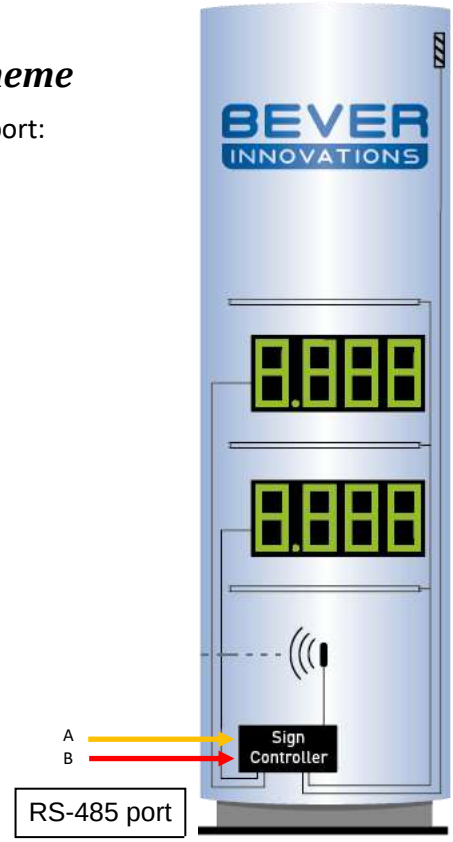
PWM price signs controller

BEVER Innovations price signs connection scheme

Connection to BEVER Innovations price sign is made to RS-485 port:



WFC communicator



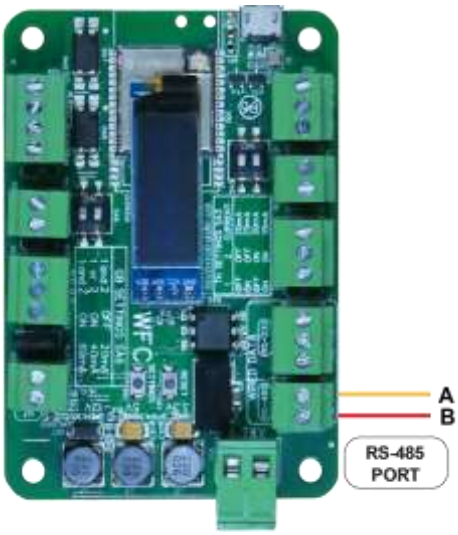
BEVER Innovations price signs controller

EXAMPLES OF CONNECTION TO READERS AND AVI SYSTEMS

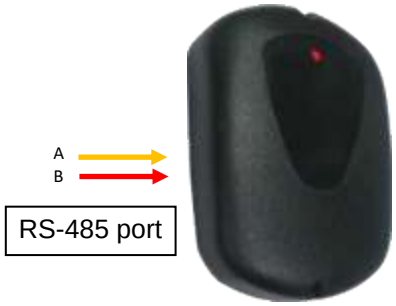
Below sections show examples of connection to various brands of readers and AVI (automatic vehicles identification) systems. This information is provided as an example. For obtaining of detailed information on connection to various brands of readers and AVI systems, their configuration and configuration of PTS-2 controller please refer to our support page *https://www.technotrade.ua/support*.

VRD-485 RFID readers connection scheme

Connection to VRD-485 RFID readers installed on dispensers is made to auxiliary RS-485 port:



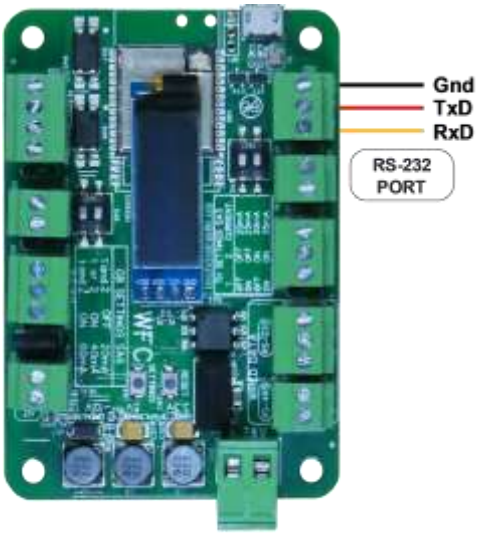
WFC communicator



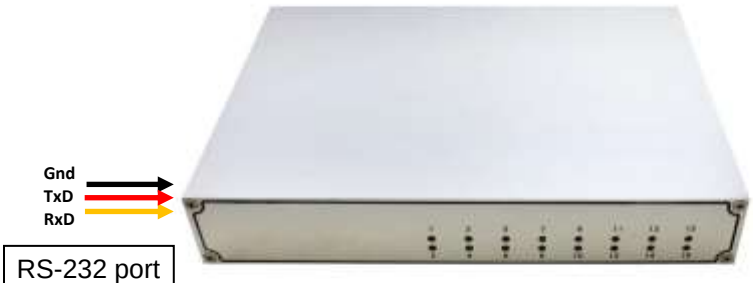
VRD-485 RFID reader

MINGTE AVI system controller connection scheme

Connection to MINGTE AVI system controller is made to RS-232 port:



WFC communicator



MINGTE AVI system controller

ORDER INFORMATION

Depending on the order code the WFC communicator can be supplied either in a view of electrical board (variant of controller supply *WFC-PCB-001*), or installed in a mounting box with cables inputs and a power switching button (variant of controller supply *WFC-BOX-001)*. An external antenna and a pigtale connector for antenna are included in a package.

Variant of controller supply in a view of electrical board (WFC-PCB-001)

Variant of WFC communicator supply installed in a metal box with cables inputs and a power switching button (variant of controller supply WFC-BOX-001)