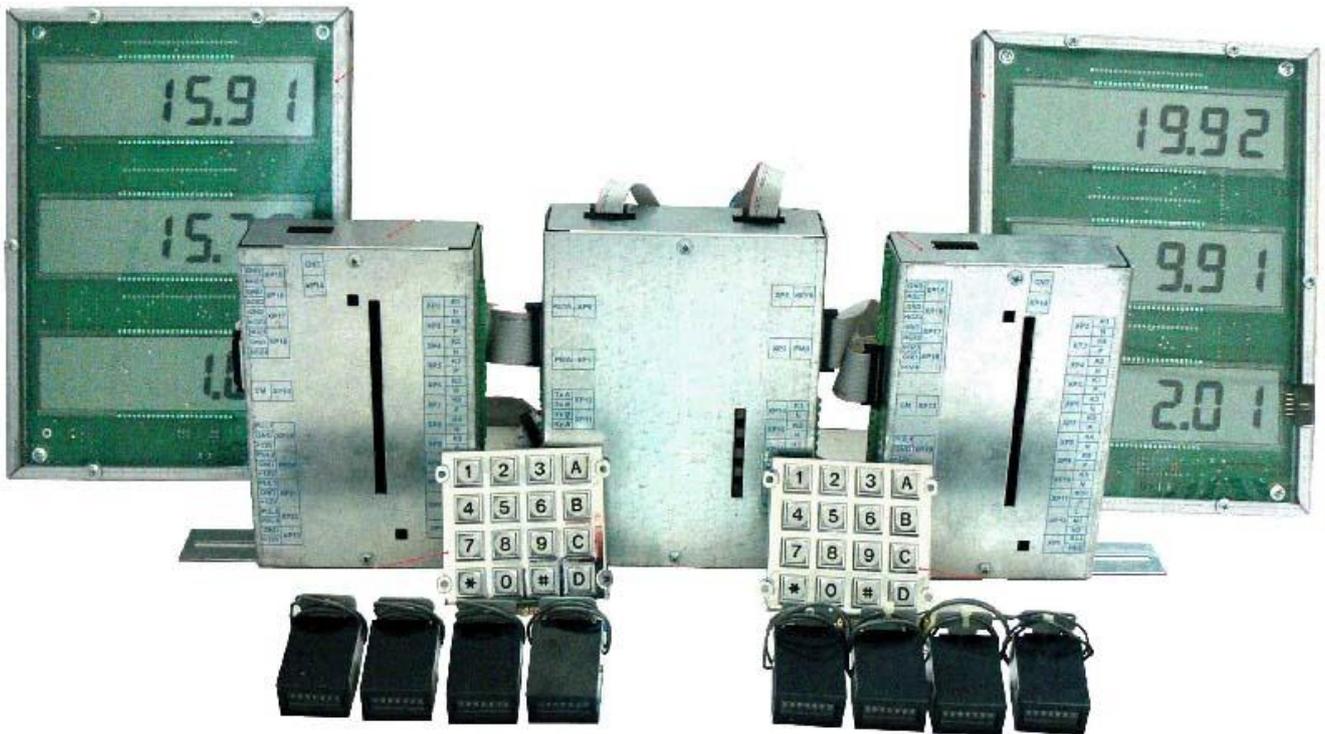


UNICON PUMPHEADS

electronics and indicators
for fuel dispensers



TECHNICAL GUIDE

(Version of firmware: V3.18)

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TECHNOTRADE LTD

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SAFETY INSTRUCTIONS

BEFORE YOU BEGIN

Dispenser has both electricity and hazardous, flammable and potentially explosive liquid. During operation it is necessary to follow all safety regulations, rules, codes and laws that apply to your area and installation due to failure to follow these instructions may result in serious injury.

SAFETY PRECAUTIONS, INSTALLATION AND MAINTENANCE

Always make sure to turn off all power of the dispenser (and submerged pump) before performing any maintenance.

USE ONLY GENUINE PARTS

For product liability to be valid no changes, completions or similar may be done in the equipment without the written consent of TECHNOTRADE LTD.

CONTACT TECHNOTRADE LTD

Trouble with the installation and operation of the dispenser should be referred to the authorized service personnel.

1. PURPOSE

Electronic pumphead for fuel dispensers UNICON-TiT (further in text named as Pumphead) is intended for provision of control over fuel dispenser on dispensing of liquid and liquefied petroleum products.

2. TECHNICAL SPECIFICATIONS

1	Maximal quantity of dispensing nozzles	2 x 5
2	Discreteness of a pulse sensor, l/pulses	0.005 ... 1
3	Maximal value of a dose for single dispensing, l	9999.00
4	Maximal value of a sum for single dispensing, currency units	9999.00
5	Maximal value of fuel price, currency units	99.99
6	Communication protocol with a POS system	Unipump
7	Range of electronic adjustment of volumeters	±10%
8	Power supply voltage, V	~220 ^{+10%} _{-15%}
9	Power network frequency, Hz	50 - 60
10	Maximal power consumption, W	30

3. MODES OF PUMPHEAD OPERATION

Available modes of Pumphead operation are:

- *stand-alone (manual)*: dispensing of petroleum is done at taking up a dispensing nozzle or using a switch START;
- *stand-alone mode with control from a keyboard*: mode of fuel dispenser operation (dispensing of preset volume, preset money amount or dispensing until a vehicle tank is full), when value of order and allowance on dispensing are set from a Pumphead keyboard;
- *automatic mode with control from a POS system*: mode of fuel dispenser operation, when value of order and allowance on dispensing are set from a POS system (control system, cash register, remote control panels, etc);
- *“EURO”mode*: mode of setting a value of order from a Pumphead keyboard and giving of an allowance command from a POS system (control system, cash register, remote control panels, etc).

4. PUMPHEAD STRUCTURE

Depending on the type and peculiarities of each fuel dispensers and requirements of a consumer configuration of a Pumphead may differ. In order to ensure flexibility and cost reduction Pumphead has a block structure. Pumphead consists of the following blocks:

- system block;
- block of data transmission (BDT);
- relay blocks;
- displays;
- keyboards;
- electromechanical counters.

4.1. System block

Is intended for provision of control over main processes of Pumphead:

- reception, processing and storing of information on dispensing of petroleum products;
- giving out of control signals to magnetic starters of fuel electric motors and flow control electromagnetic valves;
- giving out of control signals to relays blocks or a block of data transmission;
- giving out of information on current dispensing to displays;
- communication with a POS system (control system, cash register, remote control panels, etc).

General view of the system unit is shown on image 4.1.1 and 4.1.2.

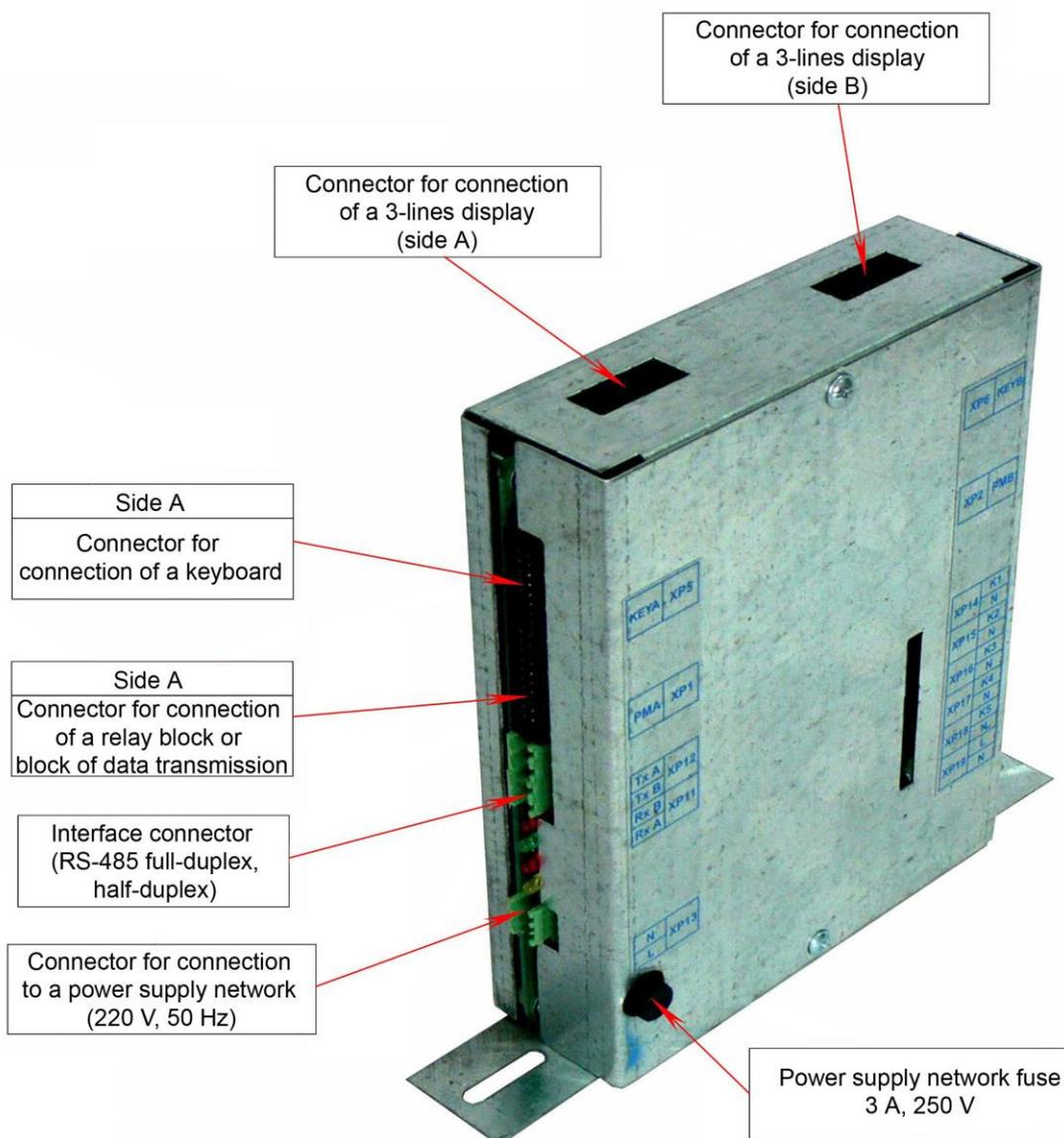


Image 4.1.1. System block. View from front left.

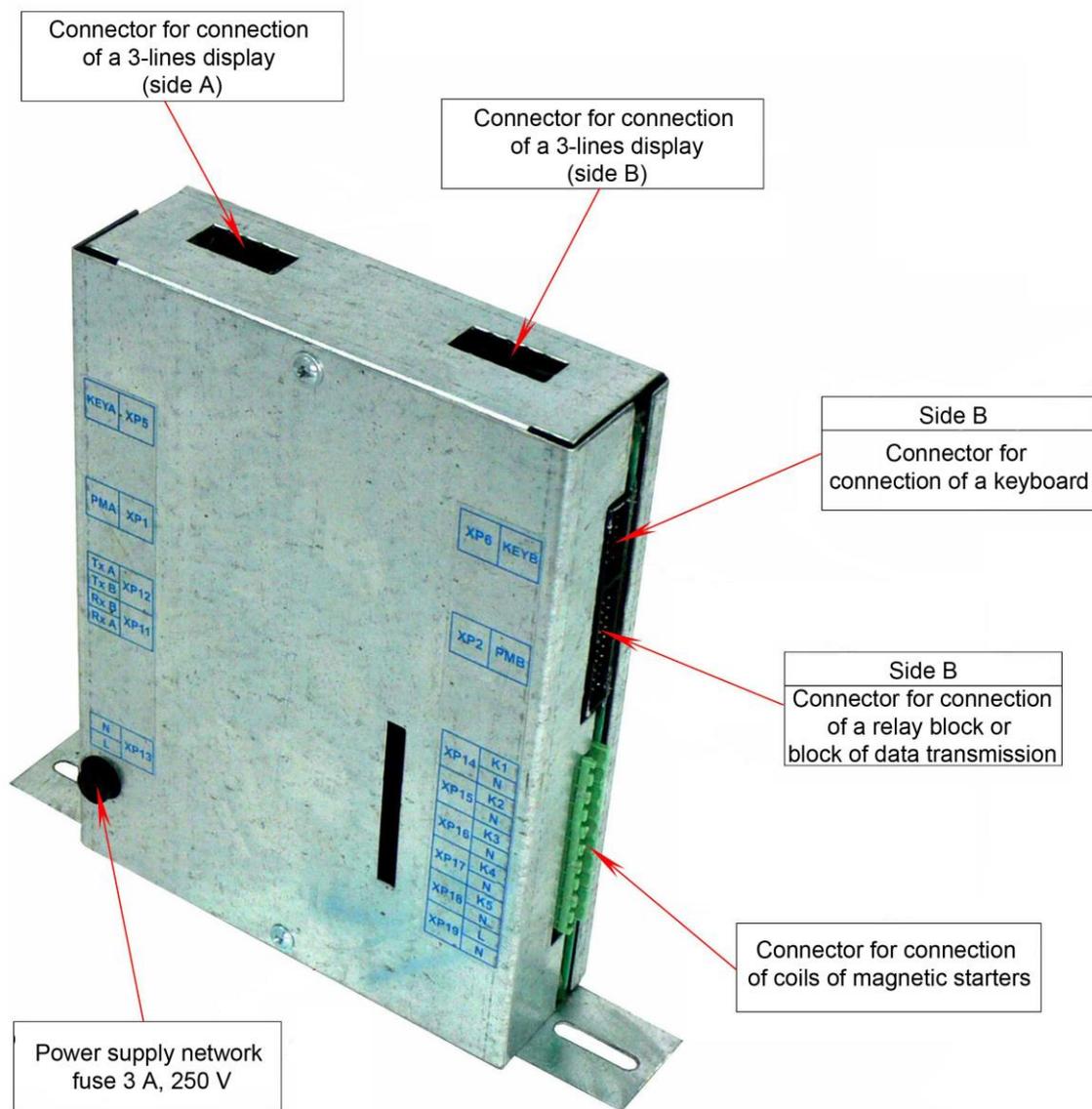


Image 4.1.2. System block. View from front right.

Scheme of location and appointment of connectors are shown on images 4.1.3 and 4.1.4:

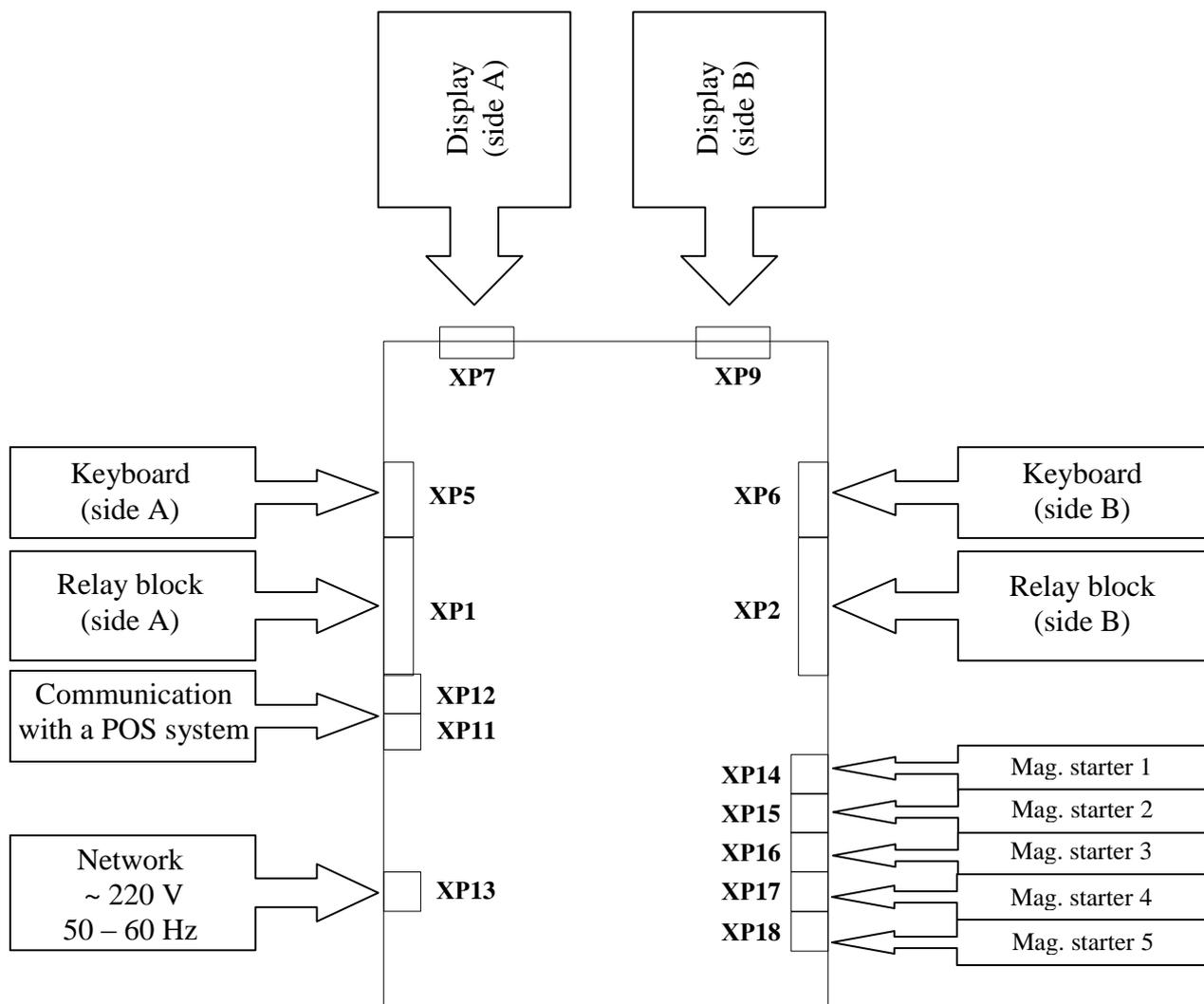


Image 4.1.3. Appointment of connectors of a system block at usage of relay blocks.

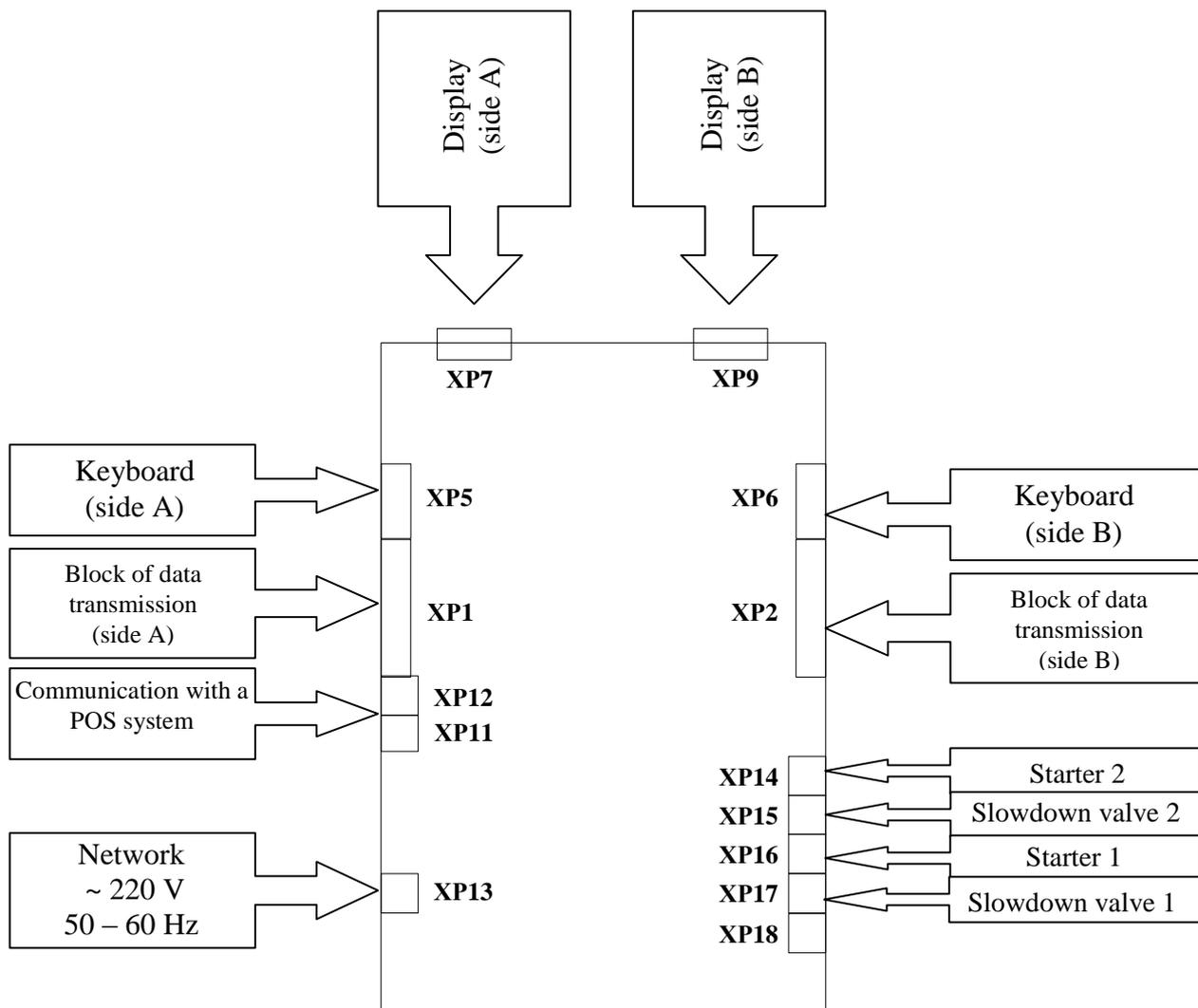


Image 4.1.4. Appointment of connectors of a system block at usage of blocks of data transmission.

Appointment of contacts of connectors of the system block is shown in tables 4.1.1 – 4.1.5.

Table 4.1.1. Appointment of contacts of connectors of the system block

Connector	Contact	Circuit	Appointment
XP1	1...20	PMA	Relay block or block of data transmission. Side A.
XP2	1...20	PMB	Relay block or block of data transmission. Side B.
XP5	1...10	KEYA	Keyboard. Side A.
XP6	1...10	KEYB	Keyboard. Side B.
XP7	1...10	DSPA	Display. Side A.
XP9	1...10	DSPB	Display. Side B.
XP11	Connection of communication line – see tables 4.1.2, 4.1.3.		
XP12			
XP13	1	L	Power supply (~220 V, 50 – 60 Hz)
	2	N	
XP14	Output relays – see tables 4.1.4, 4.1.5.		
XP15			
XP16			
XP17			
XP18			

Connection of the Pumphead with a POS system is made using RS-485 interface. Physical realization - full duplex or half duplex.

Appointment of contacts of connectors XP11 and XP12 of the system block in case of application of 4-lines communication (full duplex) is shown in table 4.1.2.

Table 4.1.2. Appointment of contacts of connectors XP11 and XP12 of the system block (full duplex)

Connector	Contact	Circuit	Appointment
XP11	1	RxA	Input A of receiver RS-485. Full duplex.
	2	RxB	Input B of receiver RS-485. Full duplex.
XP12	1	TxA	Output A of transmitter RS-485. Full duplex.
	2	TxB	Output B of transmitter RS-485. Full duplex.

Appointment of contacts of connectors XP11 and XP12 of the system block in case of application of 2-lines communication (half duplex) is shown in table 4.1.3.

Table 4.1.3. Appointment of contacts of connectors XP11 and XP12 of the system block (half duplex)

Connector	Contact	Circuit	Appointment
XP11	1	RxA	Line B of interface RS-485. Half-duplex.
	2	RxB	
XP12	1	TxA	Line A of interface RS-485. Half-duplex.
	2	TxB	

Appointment of signals on contacts of connectors XP14 – XP18 depends on the type of applied blocks: relay blocks or blocks of data transmission. Physical realization – normally opened relay contacts. When voltage is applied to the coil of relay contacts Ki and Ni close and in the circuits of magnetic starter or in circuits of electromagnetic flow control valves flows current, which leads to switching on of a fuel pump motor or opening of electromagnetic flow control valves.

Appointment of contacts of connectors XP14 – XP18 in case of application of a block of data transmission is shown in table 4.1.4.

Table 4.1.4. Appointment of contacts of connectors XP14 – XP18 (block of data transmission)

Connector	Contact	Circuit	Appointment
XP14	1	K1	Coils of starter of pump motor and slowdown valve 2
	2	N1	
XP15	1	K2	Coil of valve of full flow 2
	2	N2	
XP16	1	K3	Coils of starter of pump motor and slowdown valve 1
	2	N3	
XP17	1	K4	Coil of valve of full flow 1
	2	N4	
XP18	1	K5	
	2	N5	

Appointment of contacts of connectors XP14 – XP18 in case of application of a relay block is shown in table 4.1.5.

Table 4.1.5. Appointment of contacts of connectors XP14 – XP18 (relay block)

Connector	Contact	Circuit	Appointment
XP14	1	K1	Coil of starter of pump motor 1
	2	N1	
XP15	1	K2	Coil of starter of pump motor 2
	2	N2	
XP16	1	K3	Coil of starter of pump motor 3
	2	N3	
XP17	1	K4	Coil of starter of pump motor 4
	2	N4	
XP18	1	K5	Coil of starter of pump motor 5
	2	N5	

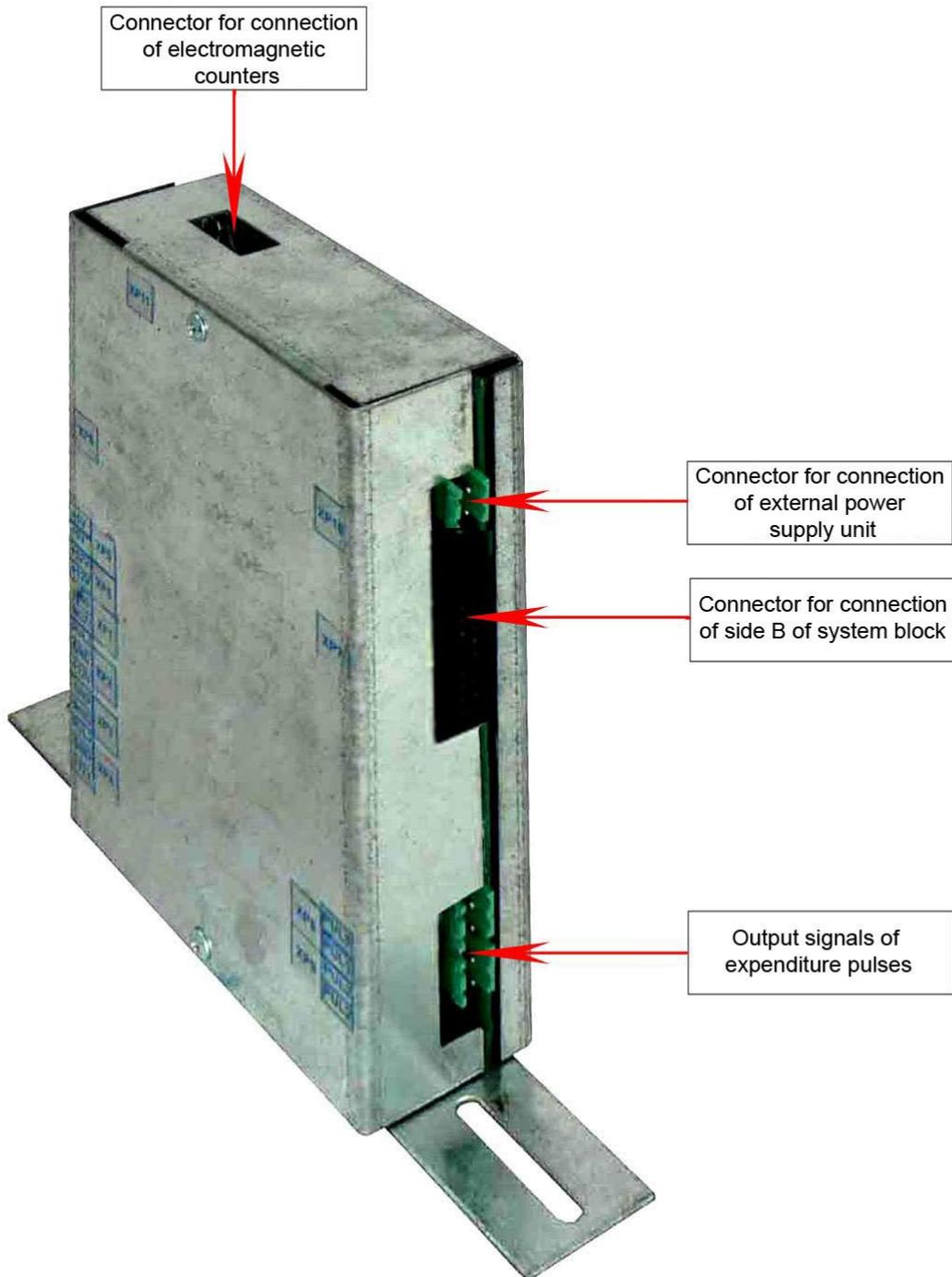


Image 4.2.2. Block of data transmission. View from front right.

Scheme of location and appointment of connectors is shown on image 4.2.3.

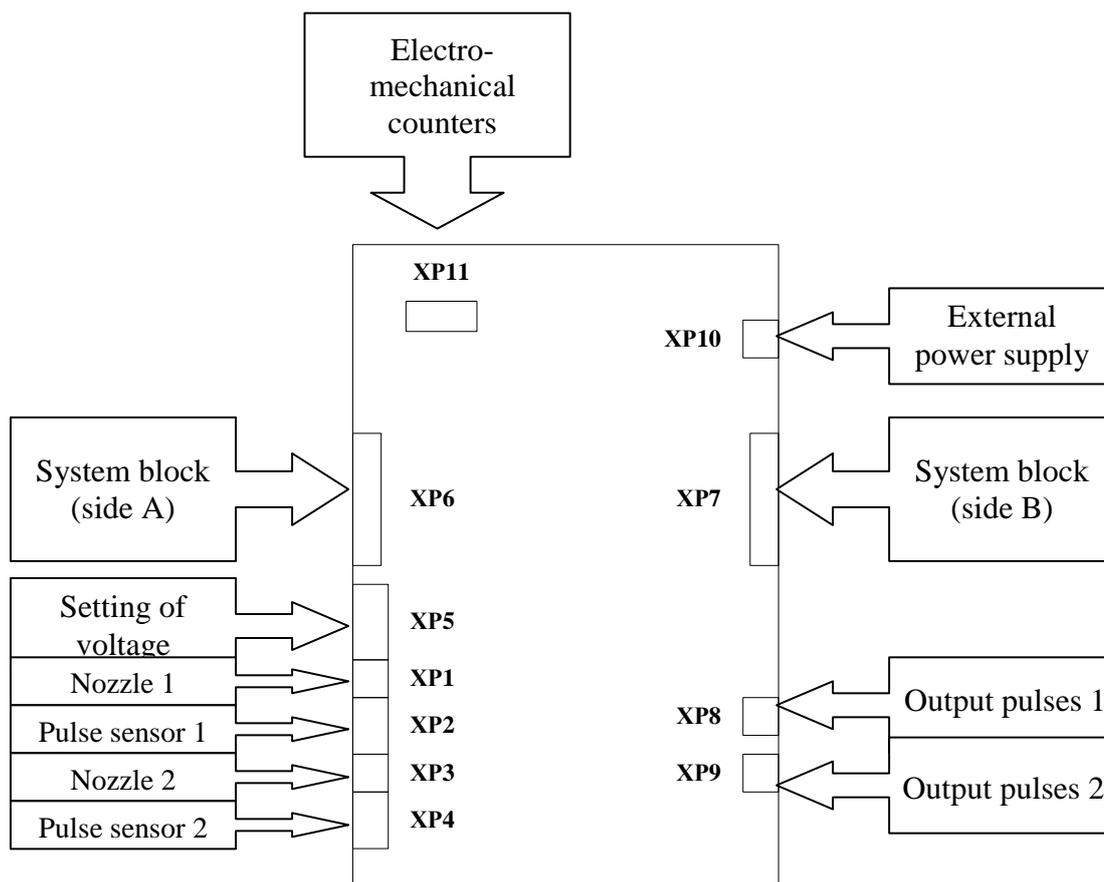


Image 4.2.3. Scheme of location of connectors on BDT.

Appointment of contacts of connectors of the BDT is shown in table 4.2.1.

Table 4.2.1. Appointment of contacts of connectors of the block of data transmission

Connector	Contact	Circuit	Appointment
XP1	1	GND	Ground
	2	NOZ1	Sensor of dispensing nozzle 1
XP2	1	+V1	Power supply of pulse sensor of expenditure 1
	2	GND	Ground
	3	PUL1	Pulses of expenditure 1
XP3	1	GND	Ground
	2	NOZ2	Sensor of dispensing nozzle 2
XP4	1	+V1	Power supply of pulse sensor of expenditure 2
	2	GND	Ground
	3	PUL2	Pulses of expenditure 2
XP5	1	+12V	Stabilized voltage of +12 V
	2	+V	Power supply of pulse sensors
	3	+V	Power supply of pulse sensors
	4	+5V	Stabilized voltage of +5 V
XP6	1...20	PMA	System block (side A)
XP7	1...20	PMB	System block (side B)
XP8	1	1K	Collector of output stage of pulses of expenditure 1
	2	1E	Emitter of output stage of pulses of expenditure 1
XP9	1	2K	Collector of output stage of pulses of expenditure 2
	2	2E	Emitter of output stage of pulses of expenditure 2
XP10	1	-V2	Negative pole of external power supply
	2	+V2	Positive pole of external power supply
XP11	1	CNT	Electromechanical counter 1
	2		Ground
	3		Electromechanical counter 2
	4		Ground
	5		
	6		Ground
	7		
	8		Stabilized voltage +12 V
	9		
	10		Stabilized voltage +12 V

4.3. Relay block

Is intended for transmission to system block signals from limit switches of dispensing nozzles and pulse sensors of expenditure, control over electromagnetic valves of flow control and also for giving out of pulses on electromechanical counters.

General view of a relay block is shown on images 4.3.1 and 4.3.2.

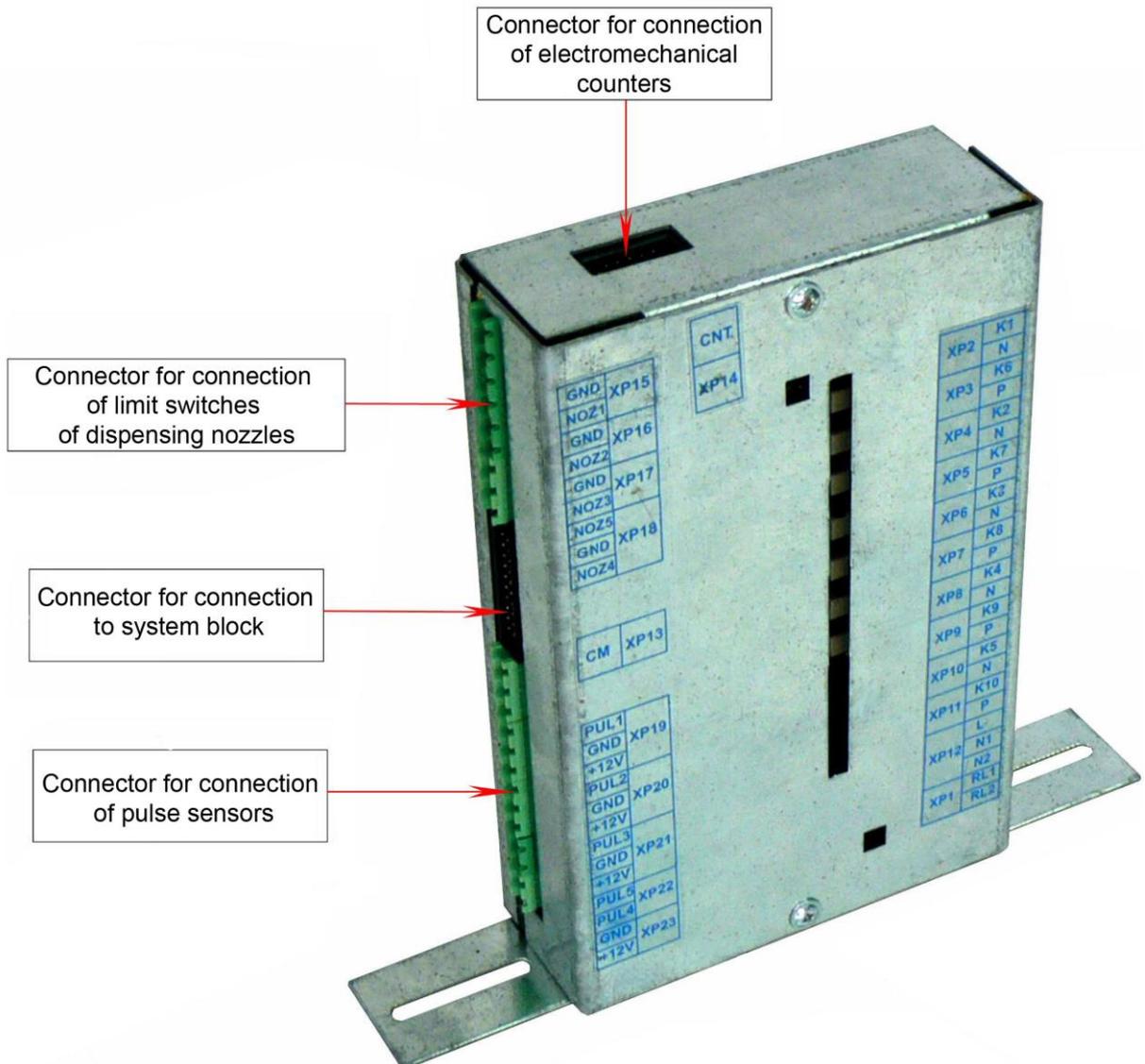


Image 4.3.1. Relay block. View from front left.

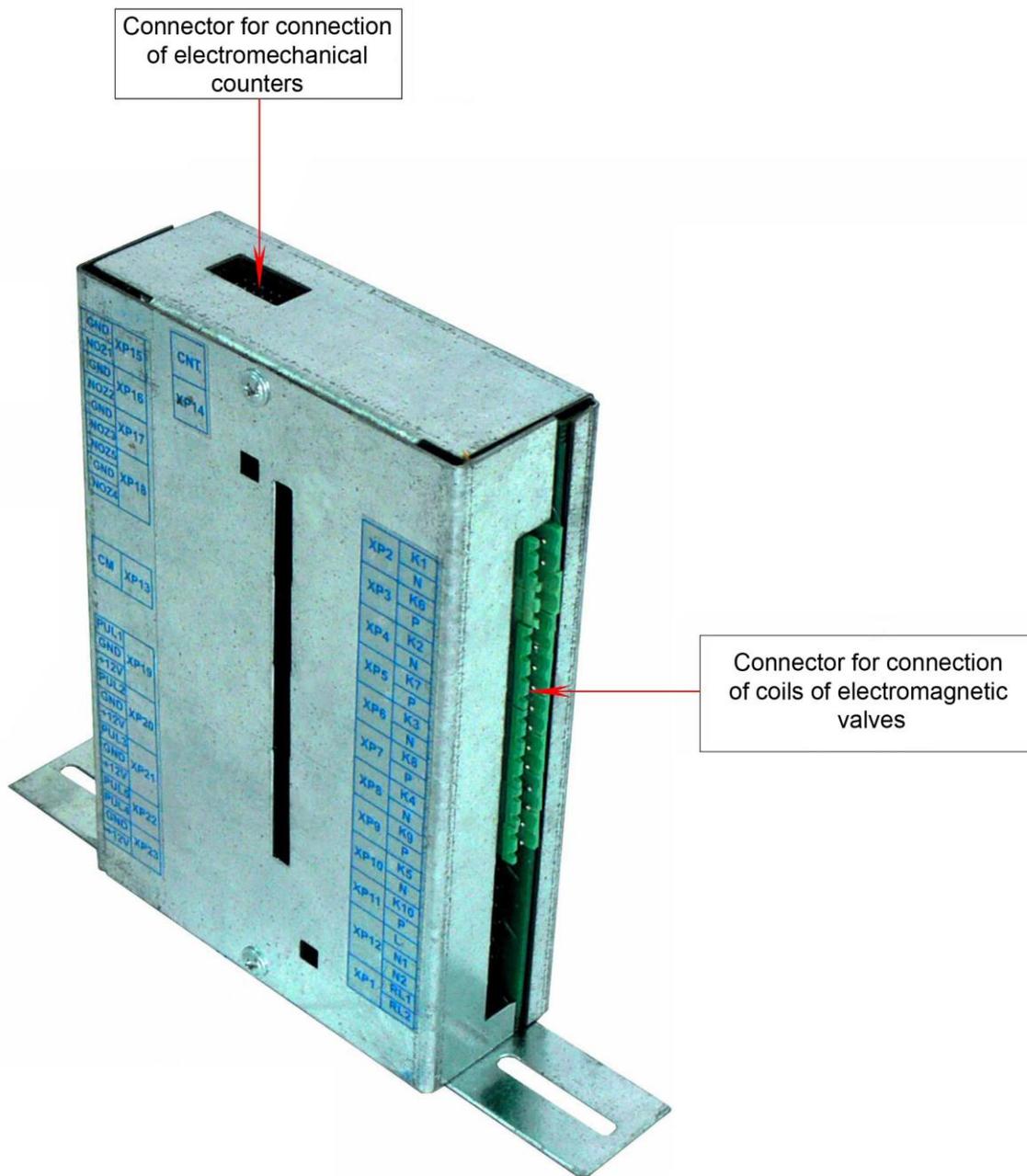


Image 4.3.2. Relay block. View from front right.

Scheme of location of connectors on relay block is shown on image 4.3.3.

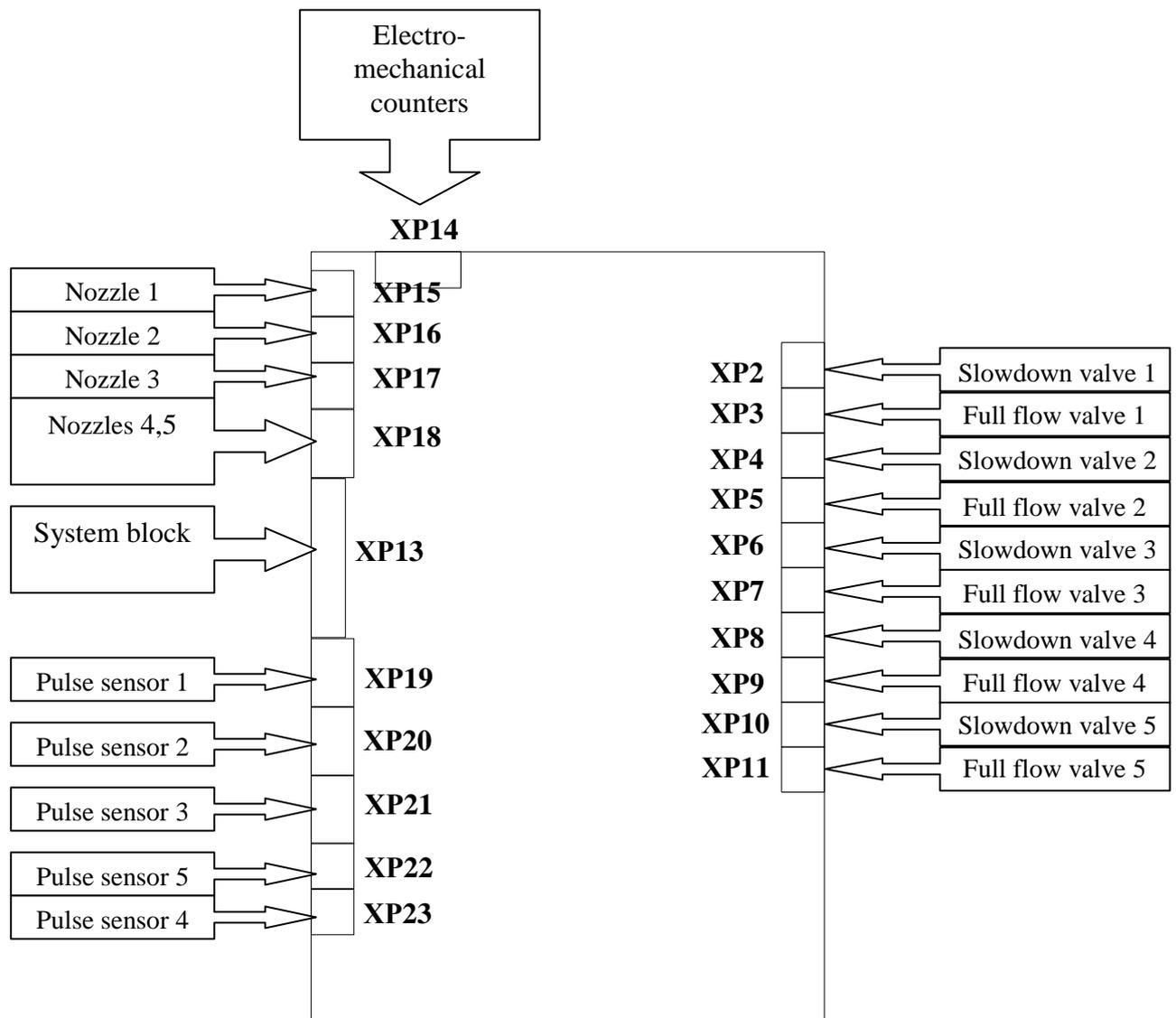


Image 4.3.3. Scheme of location of connectors on relay block.

Appointment of contacts of connectors of the relay block is shown in table 4.3.1.

Table. 4.3.1. Appointment of contacts of connectors of the relay block.

Connector	Contact	Circuit	Appointment
XP2	1	K1	Coil of slowdown valve 1
	2	N1	
XP3	1	K6	Coil of a full flow valve 1
	2	P6	
XP4	1	K2	Coil of slowdown valve 2
	2	N2	
XP5	1	K7	Coil of a full flow valve 2
	2	P7	
XP6	1	K3	Coil of slowdown valve 3
	2	N3	
XP7	1	K8	Coil of a full flow valve 3
	2	P8	
XP8	1	K4	Coil of slowdown valve 4
	2	N4	
XP9	1	K9	Coil of a full flow valve 4
	2	P9	
XP10	1	K5	Coil of slowdown valve 5
	2	N5	
XP11	1	K10	Coil of a full flow valve 5
	2	P10	
XP13	1...20	CM	System block
XP14	1	CNT	Electromechanical counter 1
	2		Ground
	3		Electromechanical counter 2
	4		Ground
	5		Electromechanical counter 3
	6		Ground
	7		Electromechanical counter 4
	8		Stabilized voltage +12 V
	9		Electromechanical counter 5
	10		Stabilized voltage +12 V
XP15	1	NOZ1	Contact of sensor of dispensing nozzle 1
	2	GND	Ground
XP16	1	NOZ2	Contact of sensor of dispensing nozzle 2
	2	GND	Ground
XP17	1	NOZ3	Contact of sensor of dispensing nozzle 3
	2	GND	Ground
XP18	1	NOZ4	Contact of sensor of dispensing nozzle 4
	2	GND	Ground
	3	NOZ5	Contact of sensor of dispensing nozzle 5
XP19	1	+V1	Power supply of a pulse sensor of expenditure
	2	GND	Ground
	3	PUL1	Pulses of expenditure 1

XP20	1	+V1	Power supply of a pulse sensor of expenditure
	2	GND	Ground
	3	PUL2	Pulses of expenditure 2
XP21	1	+V1	Power supply of a pulse sensor of expenditure
	2	GND	Ground
	3	PUL3	Pulses of expenditure 3
XP22	1	PUL4	Pulses of expenditure 4
	2	PUL5	Pulses of expenditure 5
XP23	1	+V1	Power supply of a pulse sensor of expenditure
	2	GND	Ground

4.4. Display

Is intended for indication of information on dispensing of petroleum products: in bottom line price is indicated, in middle line – volume dispensed, in top line – money amount of dispensed petroleum.

General view of the display is shown on image 4.4.1.



Image 4.4.1. 3-line display.

4.5. Keyboard

Is intended for dispensing of petroleum in modes of operation with keyboard (preset) and also for programming of dispenser parameters (configuration).

General view of keyboard is shown on image 4.5.1.

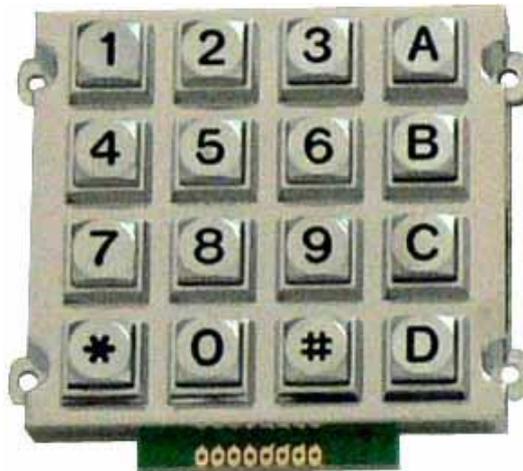


Image 4.5.1. Keyboard.

4.6. Electromechanical counter

Is intended for leading of account on dispensing petroleum.

General view of the electromechanical counter is shown on image 4.6.1.



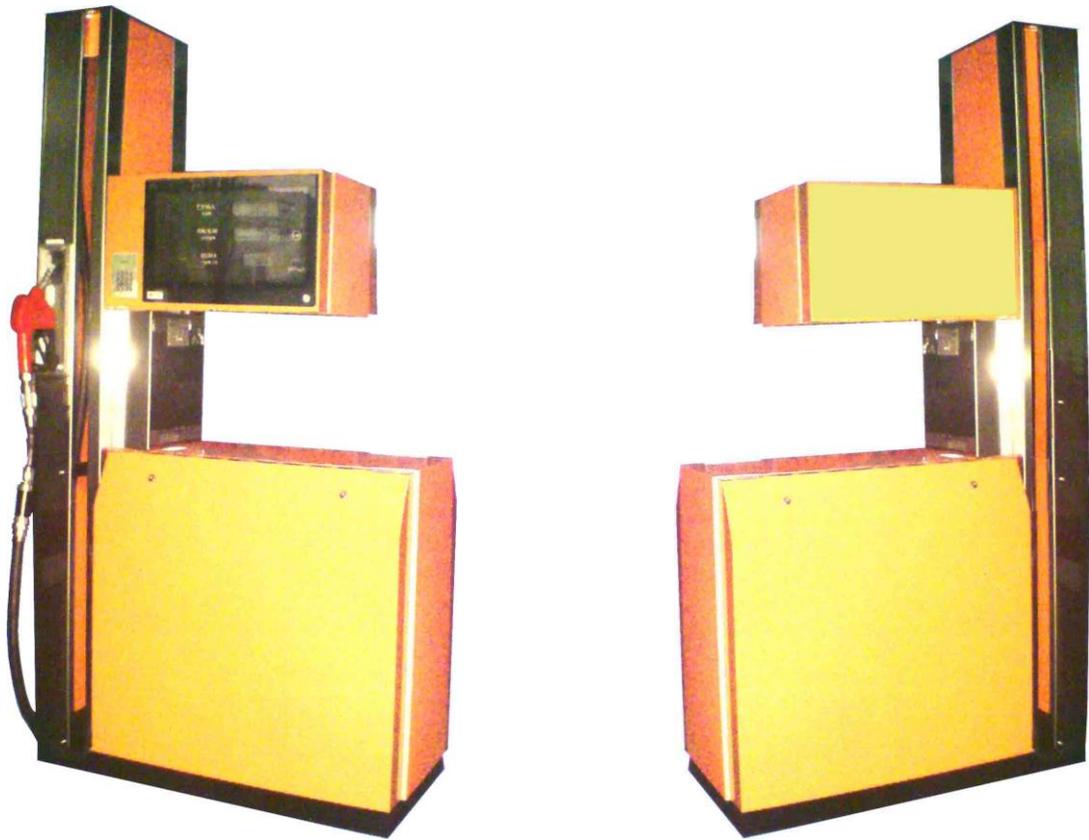
Image 4.5.1. Electromechanical counter.

5. VARIANTS OF EXECUTION

Depending on a type of a fuel dispenser, quantity of dispensing nozzles, quantity of sides, etc. Pumphead is supplied with various blocks. Type of blocks, their quantity and values of programmable parameters are defined on a stage of formation of order on supplies. Minimal quantity of blocks and therefore minimal cost has a Pumphead for a dispenser with 1 dispensing nozzle and 1 side.

5.1. Single product – single dispensing nozzle. Single sided fuel dispenser.

General view of a single nozzle fuel dispenser with a possibility of dispensing to one side is shown on image 5.1.1.



a) Front view

b) Backside view

Image 5.1.1. Single nozzle single sided fuel dispenser.

In this case Pumphead consists of three main components (see image 5.1.2):

- system block;
- BDT;
- display.

Connection of electromechanical counters and keyboard is possible (shown on image 5.1.3).

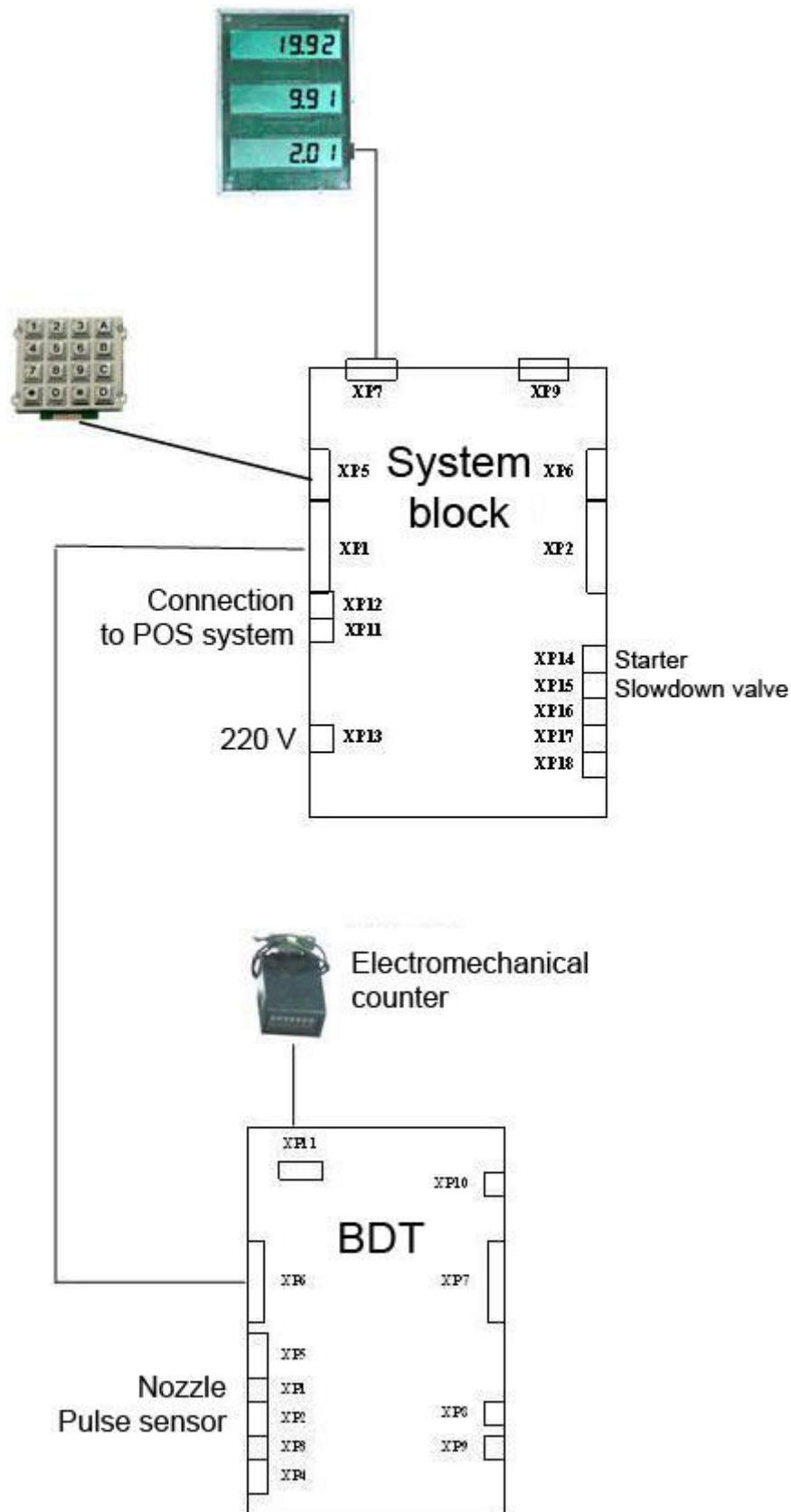


Image 5.1.3. Connections of a Pumphead for control over single nozzle single sided fuel dispenser.

5.2. Single product – single dispensing nozzle. Double sided fuel dispenser.

General view of a single nozzle fuel dispenser with two sides is shown on image 5.2.1.



Image 5.2.1. Single nozzle double sided fuel dispenser.

In this case Pumphead consists of four main components (see image 5.2.2):

- system block;
- BDT;
- display (2 units).

Connection of electromechanical counters and keyboard is possible (shown on image 5.2.3).



Image 5.2.2. Structure of Pumphead for control over single nozzle double sided fuel dispenser.

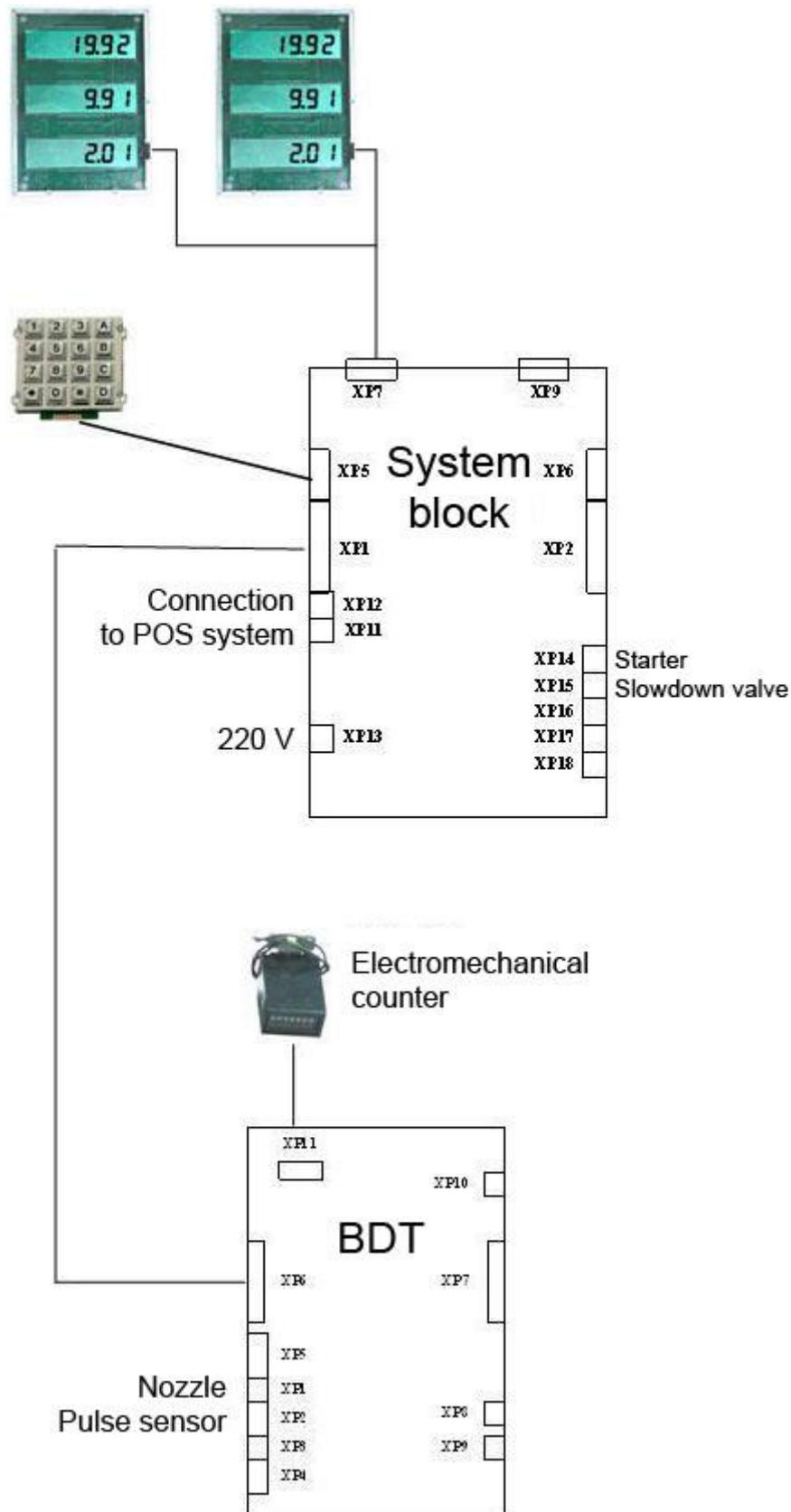


Image 5.2.3. Connections of a Pumphead for control over single nozzle double sided fuel dispenser.

5.3. Two products – two dispensing nozzles. Double sided fuel dispenser.

General view of a single nozzle fuel dispenser with two sides is shown on image 5.2.1.



a) Front view

b) Backside view

Image 5.3.1. Double nozzles double sided fuel dispenser.

Pumphead consists of the following components (see image 5.3.2):

- system block;
- BDT;
- display (4 units).

Connection of 2 electromechanical counters (each per a dispensing nozzle) and 2 keyboards (each per side) is possible (shown on image 5.3.3).



Image 5.3.2. Structure of Pumphead for control over double nozzle double sided fuel dispenser.

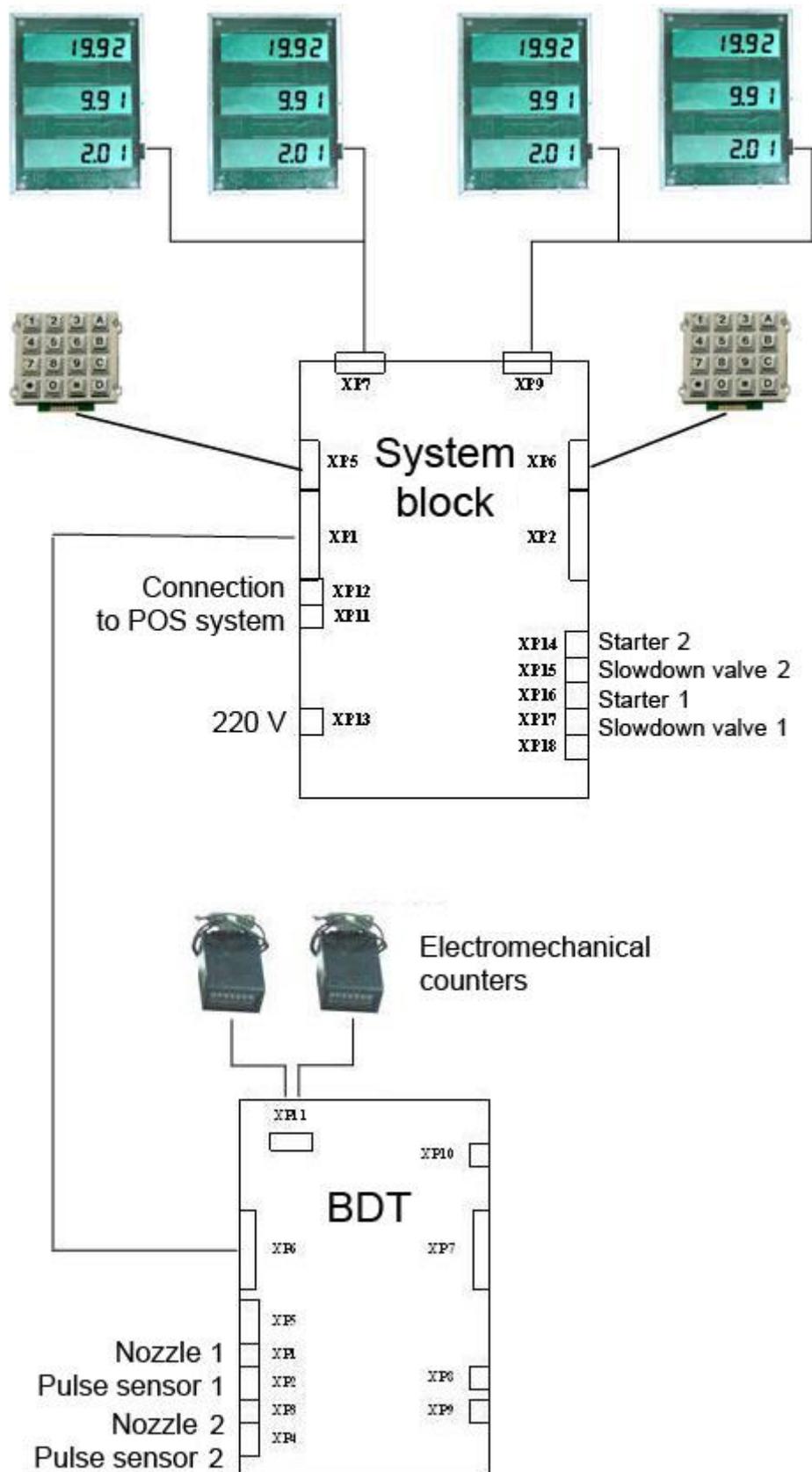


Image 5.3.3. Connections of a Pumphead for control over double nozzles double sided fuel dispenser.

5.4. Modular fuel dispenser

General view of a modular fuel dispenser for 4 products and with 8 dispensing nozzles is shown on image 5.4.1.



a) Front view

b) Backside view

Image 5.4.1. Modular fuel dispenser for 4 products and with 8 dispensing nozzles.

Pumphead consists of the following components (see image 5.4.2):

- system block;
- BDT (2 units each per side);
- display (2 units each per side).

Connection of electromechanical counters (each per dispensing nozzle) and 2 keyboards (each per side) is possible (shown on image 5.4.3).

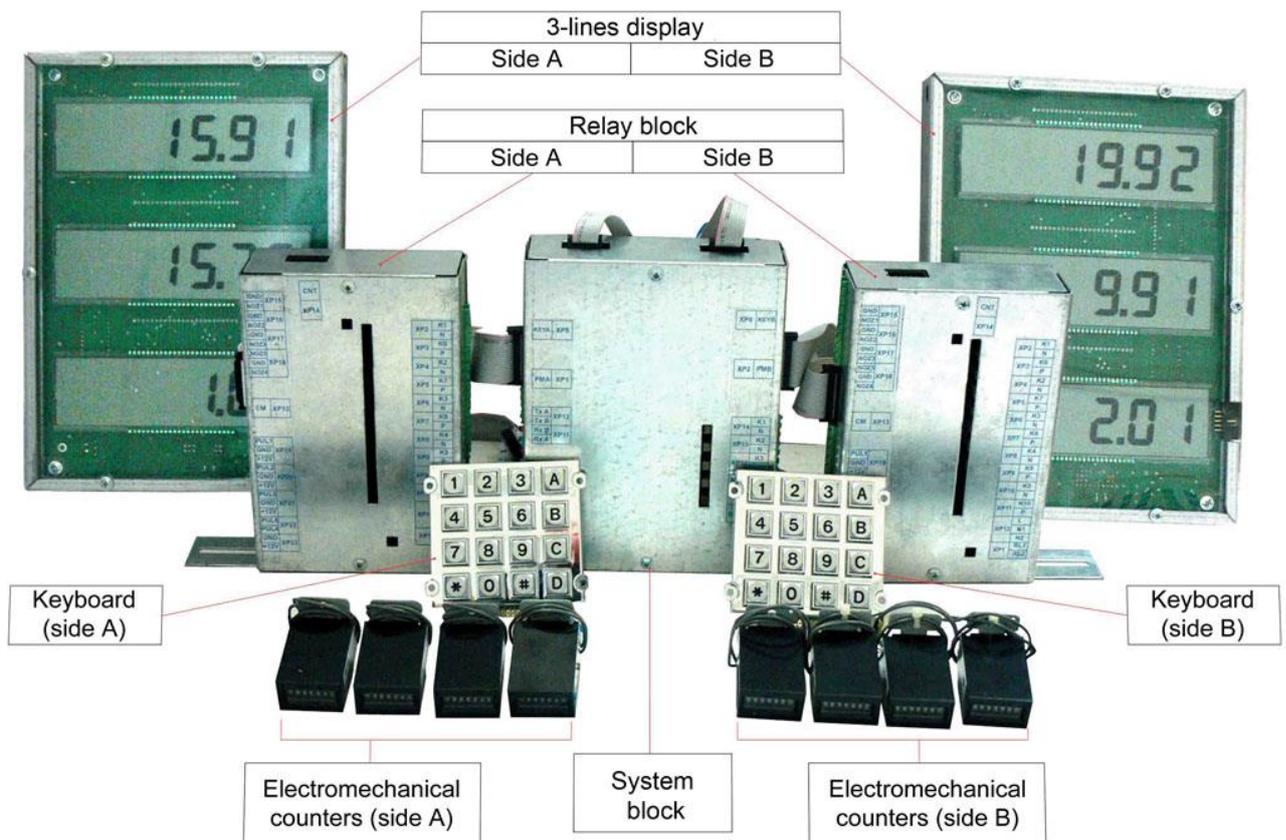


Image 5.4.2. Structure of Pumphead for control over modular fuel dispenser.

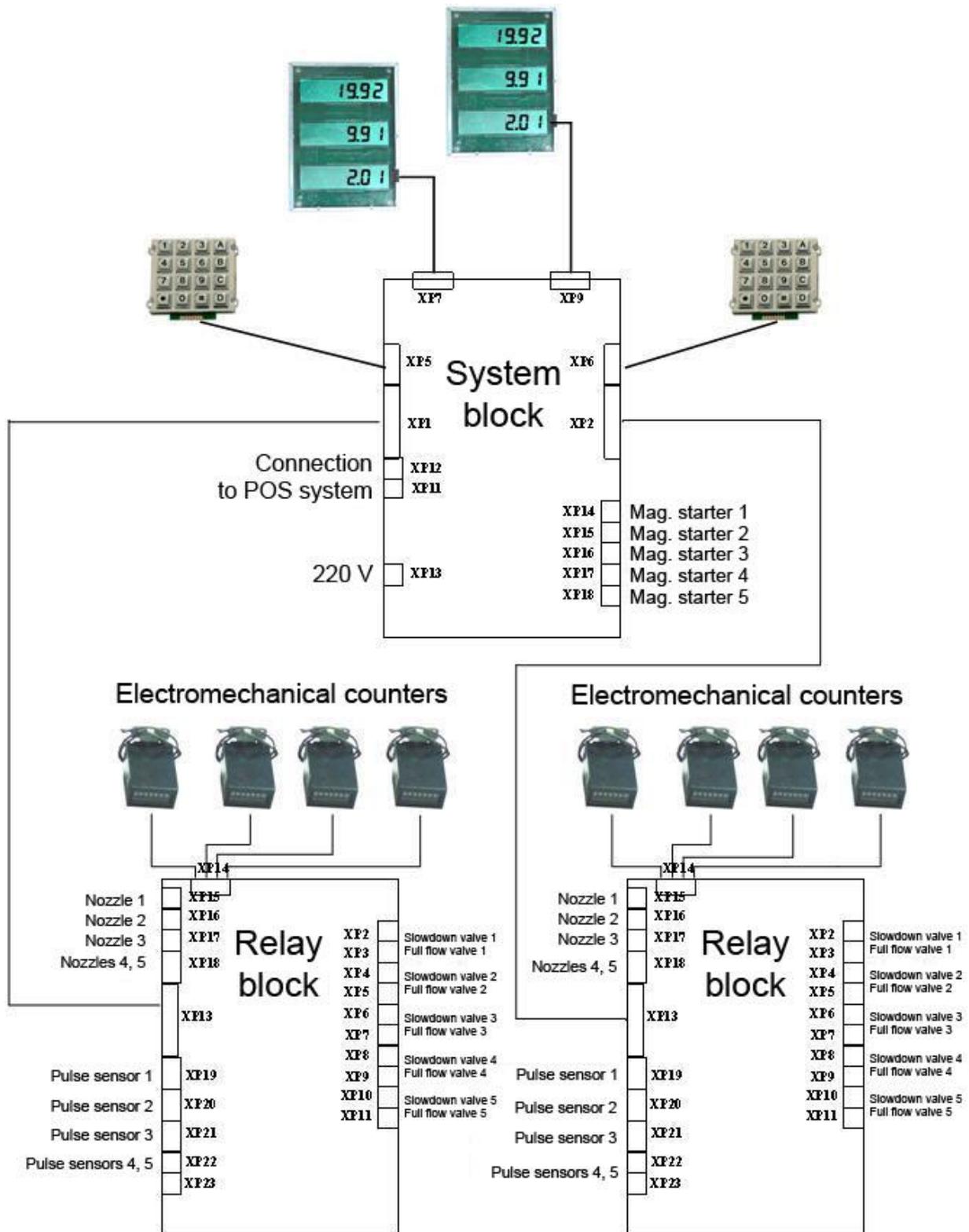


Image 5.4.3. Connections of a Pumphead for control over modular fuel dispenser.

6. PREPARATION TO OPERATION

Sequence of operations is the following:

1. Study given technical guide on Pumphead.
2. Check and if necessary set a corresponding power supply voltage for pulse sensors of expenditure. Manufacturer does not bear responsibility at breakage of a pulse sensor as a result of feeding it with incorrect power supply voltage.
3. Install all required blocks of the Pumphead in explosion-proof zone of the fuel dispenser.
4. Perform all required connections to the system block in accordance with given technical guide and documentation to the fuel dispenser, namely:
 - a. To connectors XP1 and XP2 using a 20-pin cable connect a BDT in accordance with images 5.1.3, 5.2.3, 5.3.3 or relay blocks in accordance with image 5.4.3 depending on the variant of fuel dispenser execution.
 - b. To connectors XP7 and XP9 using 10-pins cables connect displays in accordance with images 5.1.3, 5.2.3, 5.3.3 or image 5.4.3 depending on the variant of fuel dispenser execution.
 - c. At necessity to connectors XP5 and XP6 connect a keyboard.
 - d. In accordance with a variant of fuel dispenser execution to connectors XP14 ... XP18 connect coils of magnetic starters and electromagnetic valves.
 - e. To connectors XP11 and XP12 connect a cable of communication with a POS system.
 - f. To connector XP13 connect a cable of power supply 220 V.
5. At usage of BDT to connectors XP1 and XP3 connect limit switches of dispensing nozzles and to connectors XP2 and XP4 – pulse sensors of expenditure.
6. At usage of relay blocks limit switches of dispensing nozzles are to be connected to connectors XP15 ... XP18, pulse sensors of expenditure – to connectors XP19 ... XP23, electromechanical valves are to be connected to connectors XP2 ... XP11.
7. Pumphead is supplied with preliminary set parameters upon request of a consumer. In case of necessity changing of parameters should be made but only by personnel, allowed to do it (having enough knowledge and experience) because incorrect values of parameters can lead to improper operation of the fuel dispenser.

Dispenser has both electricity and hazardous, flammable and potentially explosive liquid. During operation it is necessary to follow all safety regulations, rules, codes and laws that apply to your area and installation due to failure to follow these instructions may result in serious injury.

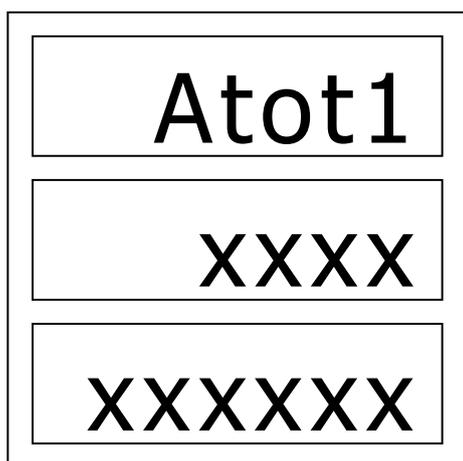
7. PUMPHEAD CONFIGURATION (FOR MANAGER)

7.1. Review of values of total electronic counters

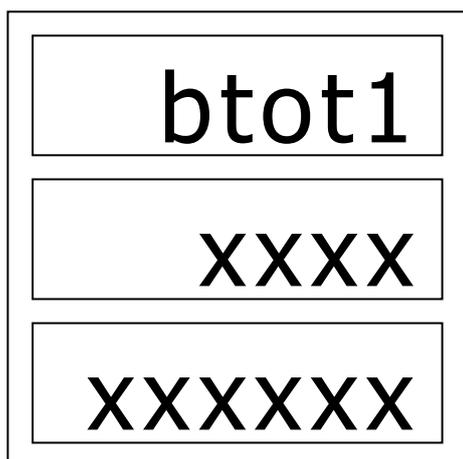
Transfer to this mode is possible only at all dispensing nozzles are hung down.

It is required to connect a keyboard to the system block.

Press a button «A» on the keyboard if you need to view total counters of the side A or a button «B» if you need to view total counters of the side B. At this display of the side, to which a keyboard is connected, will show the following information:



if button «A» is pressed, or



if button «B» is pressed.

Information in a top line of the display means that selected side is A or B and shows a number of a total counter (1 in above images).

In middle and bottom lines a total counter value is shown.

For indication of value of the next total counter press a button «A» (or «B»).

To exit this mode press a button «ESC» (or «*») and not press any other button during approximately 30 seconds.

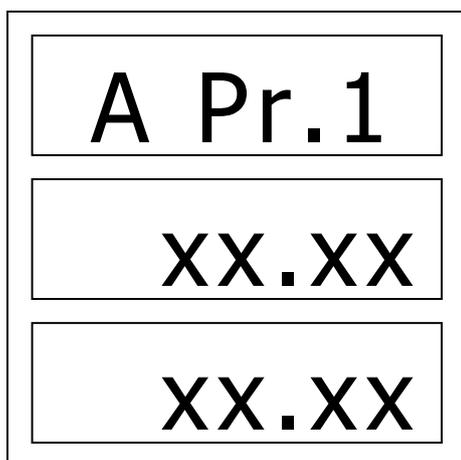
7.2. Review of petroleum product price

Review of price is possible only at fuel dispenser operation in autonomous mode (value of parameter 2 equals to 1 or 2).

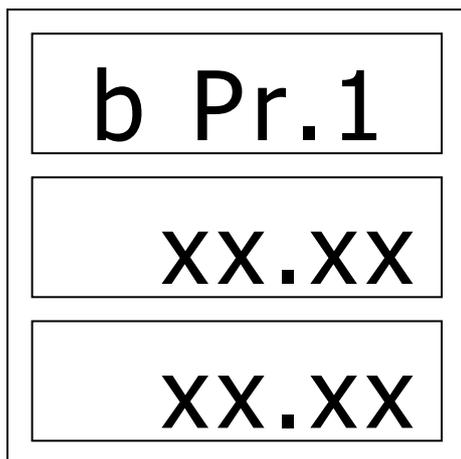
Transfer to given mode is possible only at all dispensing nozzles of dispenser hung down.

It is required to connect a keyboard to the system block.

For review of the price press a button «C» on the keyboard. At this display of the side, to which a keyboard is connected, will show the following information:



on display of side A, or



on display of side B.

Here symbols xx.xx mean a value of set price, at this it should be equal on both lines (middle and bottom) of the display.

For review of the price of the next dispensing nozzle press a button «ENT» (or «#»).

For review of price on another side press a button «A» or «B», which corresponds to address of the side.

To exit the mode press a button «ESC» (or «*»).

7.3. Change of petroleum product price

Change of price is possible only at fuel dispenser operation in autonomous mode (value of parameter 2 equals to 1 or 2).

For change of petroleum product price it is necessary to enter a mode of price review as described in point 7.2 above.

Select a required dispensing nozzle by pressing a button «ENT» (or «#»).

Set a price in cents (hundredths of a monetary unit).

Press a button «ENT» (or «#»).

Pumphead will remember a new value for price of dispensing nozzle and will transfer to review of price for the next dispensing nozzle.

After entering all prices it is recommended to perform check of entered values.

To exit this mode press a button «ESC» (or «*»).

8. PUMPHEAD CONFIGURATION (FOR ENGINEER)

8.1. Review/editing of Pumphead parameters

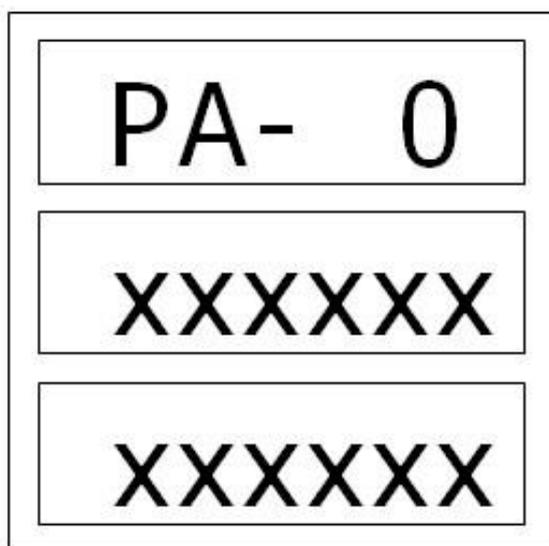
To enter the mode it is necessary to open a system block, having previous switched it off from the electric network. It is required to connect a keyboard to the system block. Review and adjustment of parameters is possible only on the side, which has a connected keyboard.

Set a jumper on contacts 2-3 of connector XP20 (top contacts of connector WH-3, located below the processor module).

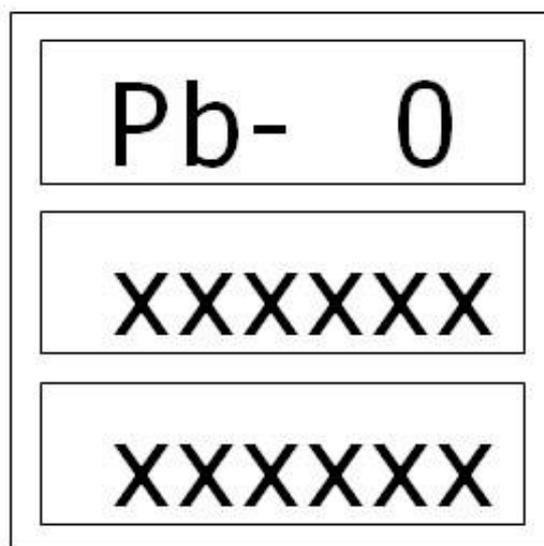
Make sure that all the nozzles of a selected side of the Pumphead are hung down.

Close a case of the system block and switch on the power supply.

At this displays of the Pumphead will show the following information:



on side A



on side B

In top line of the display a side of Pumphead is indicated A – side A, b – side B and a number of a parameters (on shown above image a number of parameter is 0).

In middle line current value of a parameter is indicated, in bottom line – a new value entered from the keyboard.

In mode of review of the parameter values of middle and bottom lines match.

For review of the next parameter press a button «D», for previous parameter – a button «C».

To change a value of parameter enter a new value on the keyboard, which will be indicated in a bottom line. To save a new parameter value press a button «D». At finding a mistake during entering press a button «ESC» (or «*»).

To exit a mode of review / editing of parameters it is necessary to remove a jumper from contacts 2-3 of connector XP20 (top contacts of connector WH-3, located below the processor module), having previously switched off the power supply of the Pumphead.

8.2. Parameters list. Version of firmware V3-18.

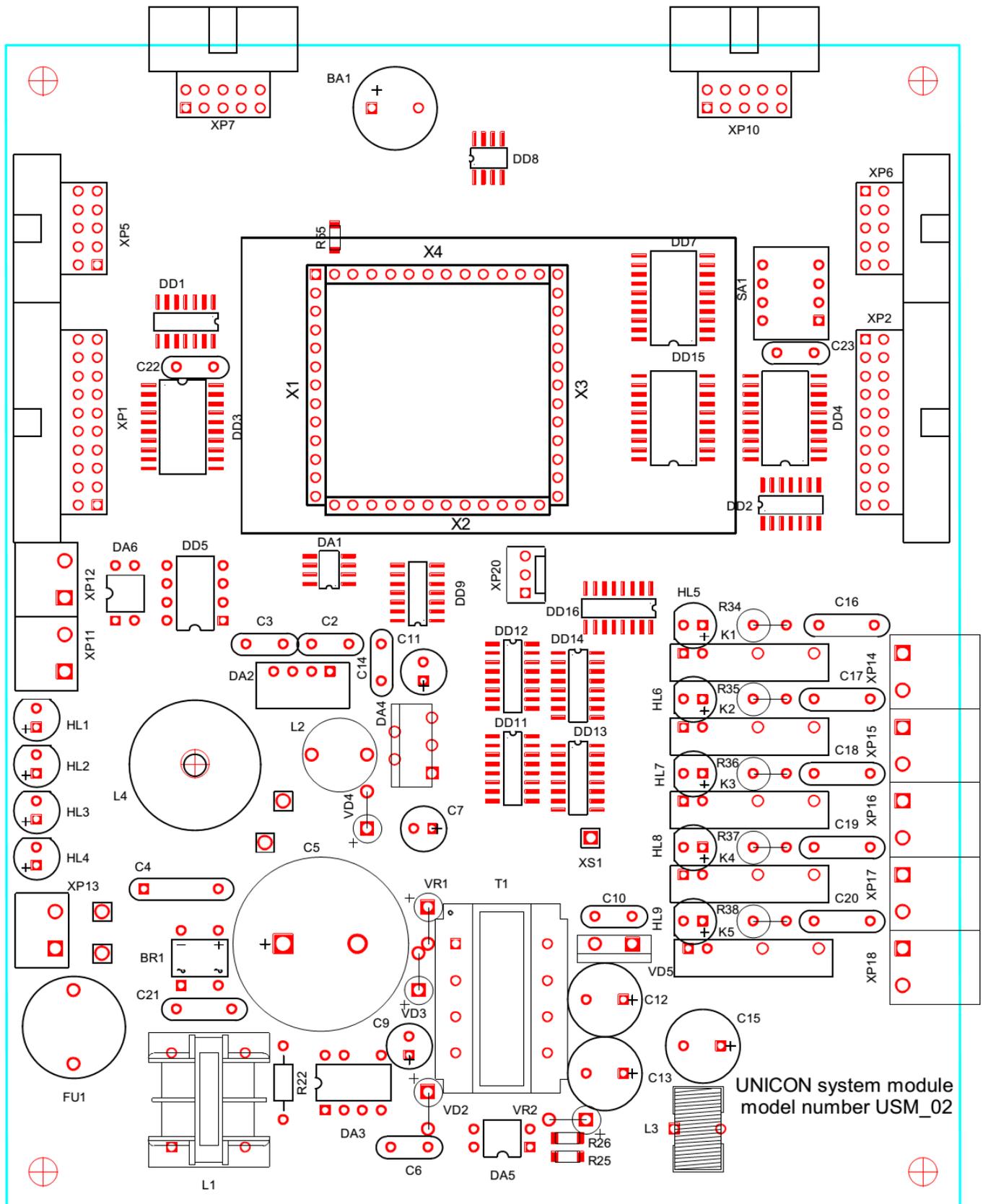
Parameter number	Range of values	Description
0	0-32	Address of the Pumphead side. 0 – side is switched off.
1	1-5	Quantity of dispensing nozzle on side
2	0-3	Mode of control over Pumphead: 0 – automatic mode with control from a POS system; 1 – stand-alone (manual); 2 – stand-alone mode with control from a keyboard of Pumphead; 3 –“EURO” mode (order from a keyboard, allowance from the POS system)
3	0-500	Duration of displaying of ordered dose, x 20 ms
4	0-500	Duration of zeros indication before dispensing start, x 20 ms
5	0-15000	Duration of displays test at switching on, ms
8	1-500	Duration of dispensing after loss of connection with a POS system, x 20 ms
9	0-1-2	Type of contact of dispensing nozzle sensors: 0 – on opening; 1 – on closing; 2 – no nozzle sensor present
10	0	Type of communication protocol with a POS system: 0 – UniPump
11 - 15	1-9999	Nozzles 1-5 prices in cents (hundredths of a monetary unit)
16	0-1	Nulling of a display at taking up a dispensing nozzle: 0 – not nulled; 1 - nulled
17	0-999900	Maximal value of volume for a single time dispensing, x 0.01 liter
18	0-999900	Maximal value of money amount for a single time dispensing in cents (hundredths of a monetary unit)
19	0-50	Minimal volume, which is not indicated on a display, x 0.01 liter
20	0-1	Mode of a dispensing nozzle: 1 – automatic hanging down after dispensing; 0 – real state of the nozzle
21 - 25	9000-11000	Nozzles 1-5 correction coefficients. 10000 – without correction
26	1-200	Discreteness of the pulse sensor of expenditure, pulses/liter
27	0-255	Duration of insensitivity of a pulse sensor input (x 0.5 ms). Only for a discreteness of 1 pulse/liter and 2 pulse/liter
28	10-250	Duration of pulses for mechanical counters, x 2 ms
29	0-1	Code of country: 0 – Ukraine; 1 – Moldova
30	0 - 1	Capacity of total electronic counters: 0 – 6 + 6 signs; 1 – 6 + 4 signs
31 - 35	0 –	Nozzles 1-5 total electronic counters values on dispensing, x 0.01 liter

	4 000 000 00	
41 - 45	0-25000	Nozzles 1-5 volume in end of dispensing, dispensed with slowdown valve, x 0,01 liter
46	0 - 1	Reaction to counting pulse signal: 0 – on pulse front; 1 – on pulse fall
47	0 - 1	Slowdown valve connection: 0 – direct; 1 – inverse
48	0 - 255	Duration of taken up nozzle emulation at parameter 9 = 2, x 20 ms
50	0-30000	Duration before stop without pulses in beginning of dispensing, x2 ms (3000 = 1 min). 0 – without stop
51 - 55	0-25000	Nozzles 1-5 volume in beginning of dispensing, dispensed with slowdown valve, x 0,01 liter
56	0-30000	Duration before stop without pulses during dispensing, x2 ms (3000 = 1 min). 0 – no stop
57	0-500	Account of overfillings, x 20 ms
58	0-1	Connection of communication blocks: 0 – relay blocks (SW1.1 set to position OFF); 1 – block of data transmission (SW1.1 set to position ON)
59	0-50	Bounce time duration of dispensing nozzle at stopping. Works at parameter 58 value equal to 1, x 2 ms
60	0-1000	Minimal volume of dispensing, x 0.01 liter
61 - 65	1-254	Reserved

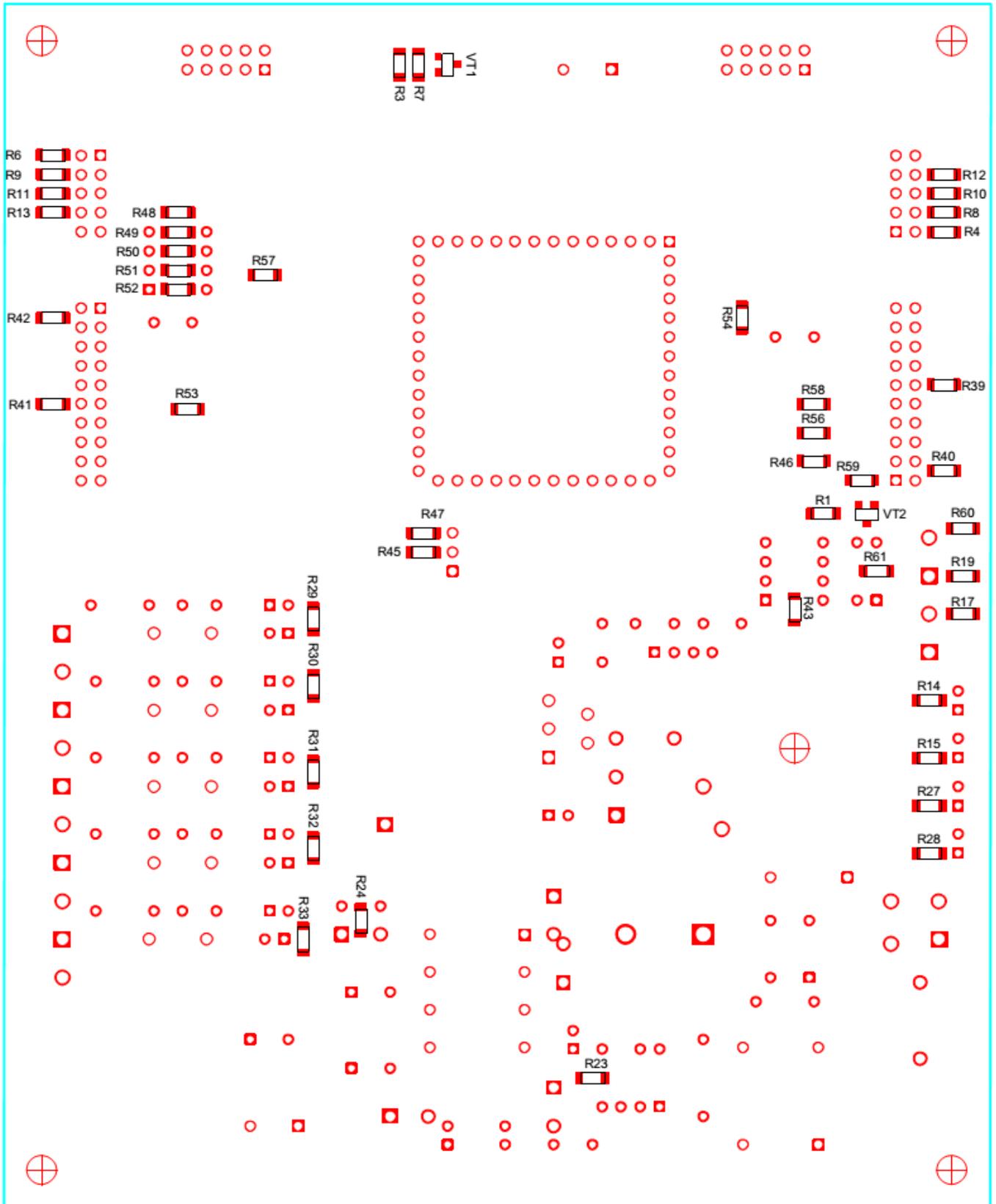
10. PCB MOUNTING BOARDS

1. System block

Top view:

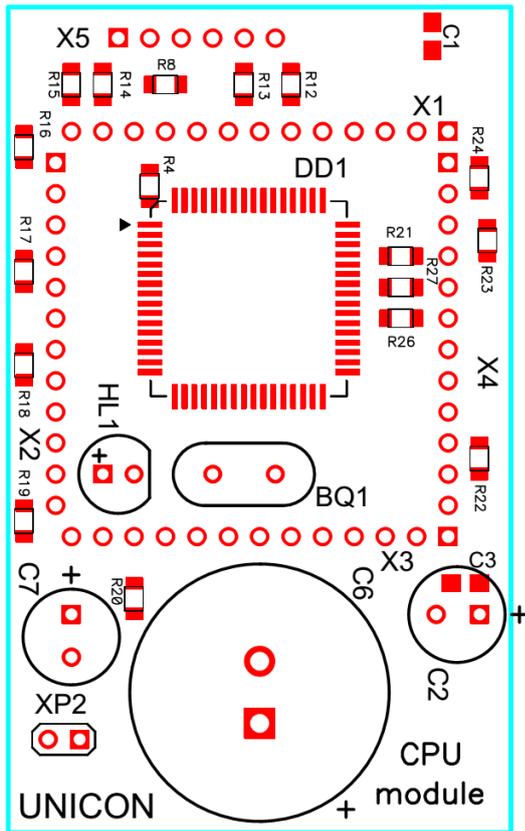


Bottom view:

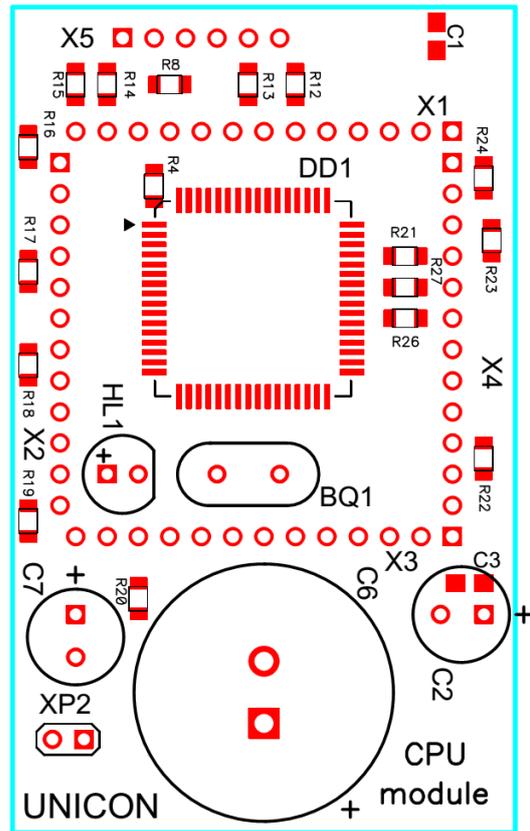


System block CPU board

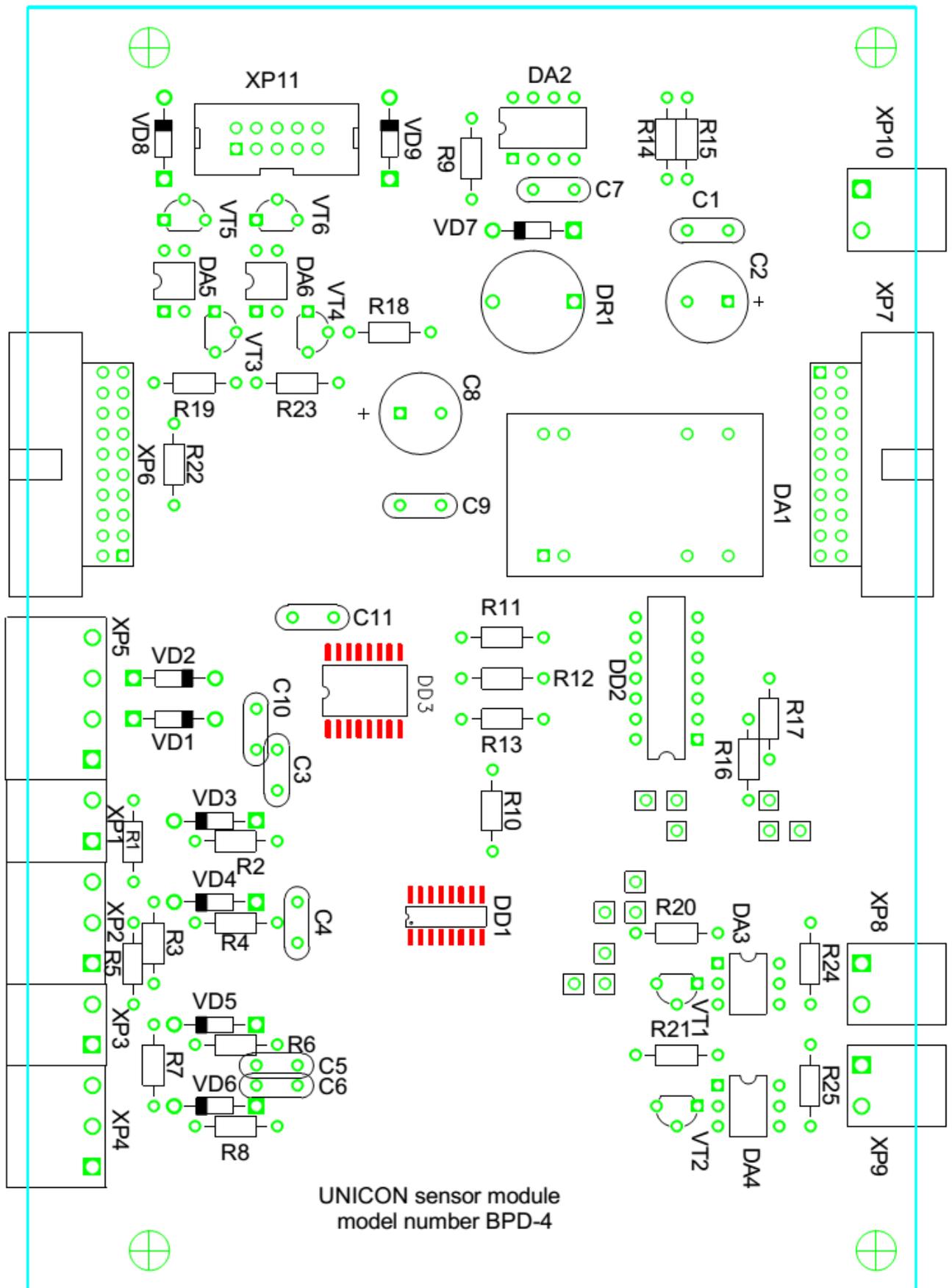
Top view:



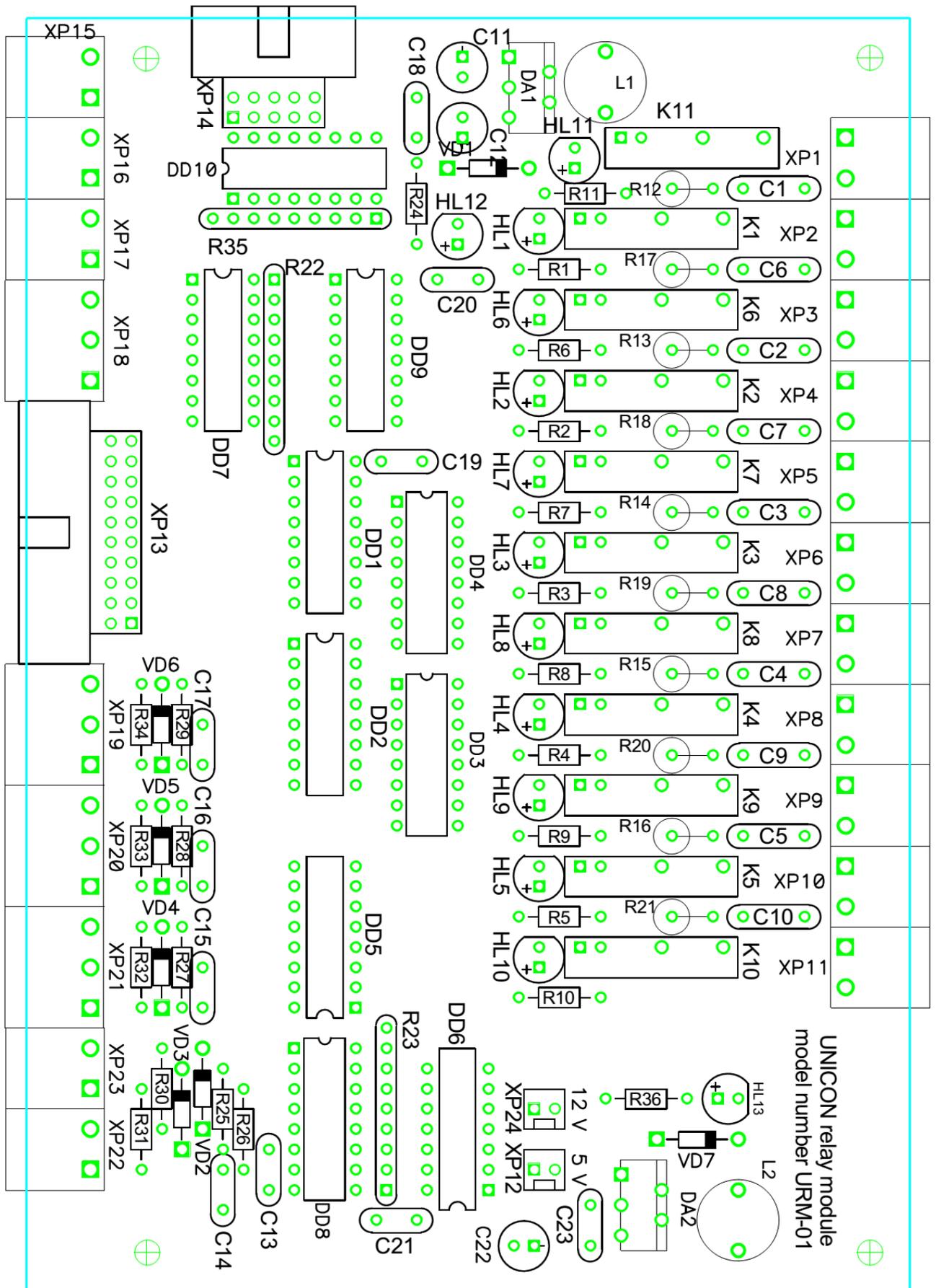
Top view:



2. Block of data transmission



3. Relay block



4. Display

