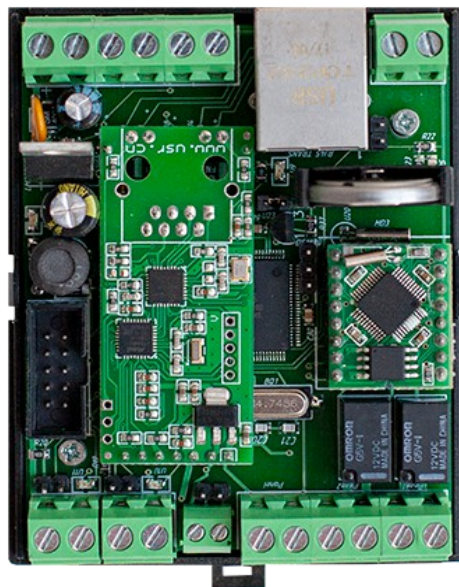


CENTRAL CONTROLLER DV-HEAD OMEGA M

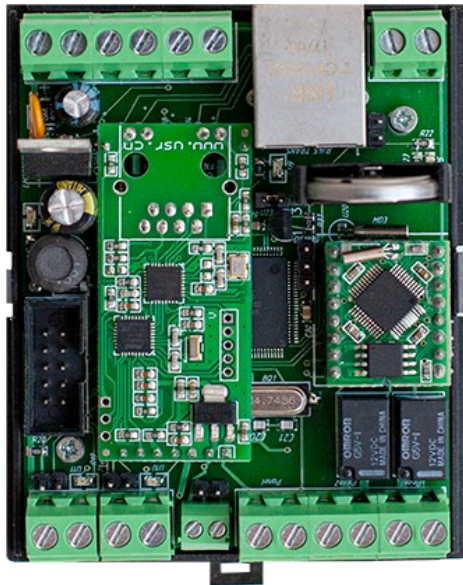
Manual



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1. General description.



DV-Head Omega M is the central controller for managing the DIVISION automation and fire alarm system. The device is configured in the DIVISION Constructor program. DV-Head Omega M can be used both independently (for small systems) and in combination with external controllers of the DIVISION system controlled via RS485 (DV-RB1, DV-RB4D, DV-RB8D, DV-RB30D, DV-APR1D, DV8-OPS, DV-PROXI-1, DV-PROXI-2, DVIR4D, DV-IR8D, DV-IR16D, DV-DM1D, DV-DM4D, DV-TMPR, DV-TMPRO, DVMETEO, DV-REG, DV-IP32 (Panel control) in the ModBus ASCII protocol. The device is made in a standard housing for mounting on a DIN rail (2 DIN). The appearance of the controller board is shown in Figure 1.

Fig.1 DV-Head Omega M controller board

2. Specifications.

DV-Head Omega M implements all the functions of each module of the Division system.

When setting up the system in the DV-Constructor program, the device provides the following software features:

Maximum number of analyzed inputs	1028
Maximum number of temperature sensors	64
Maximum number of statuses	1024

The circuit diagram of the DV-Head Omega M provides the following specifications:

Total devices of different types connected to DV-Head Omega M	32
Inputs	4
Relay	2
RS485 ports for connecting Division modules	2
RS485 ports for connecting DV-IP32 panels	1
TCP/IP interface	1
MP3 module	1
Real time clock	1
Device temperature control sensor	1
Thresholds for switching the inputs of the security alarm system to the state:	
"short circuit",	$B < 0.75$,
"norm",	$B > 0.75 \dots < 1.44$,
"attention",	$B > 1.44 \dots < 1.89$,

"work",	B>1.89.....<3.47,
"break"	B>3.47,
Maximum switching relay, current and voltage	0.5A at ~220V And at 24V
Supply voltage, V	9-15
Current consumption, no more than, mA	450
Overall dimensions (WxHxD), mm	57x86x57,
Size	4 DIN
Device weight	135 g

The TCP/IP module is configured as Server and comes from the factory with the following settings:

- ! IP address: 192.168.1.190
- ! PORT: 5014
- ! number of simultaneously connected clients (default): 4
- ! maximum number of simultaneously connected clients: 4

3. Composition of the product.

Delivery includes:

- 1) central controller DV-Head Omega M – 1 pc.;
- 2) instruction manual DV-Head Omega M – 1 pc.

4. Description of the operation of the DV-Head Omega M controller.

4.1. Work algorithm.

DV-Head Omega M controls external modules via RS-485 interfaces, such as DV-RB1, DV-RB8D, DV-RB30D, DV-RB4D, DV-APR1D, DV8-OPS, DVPROXI-1, DV-PROXI-2, DV-IR4D, DV-IR8D, DV-IR16D, DV-DM1D, DV-DM4D, DVTMPR, DV-TEMPRO, DV-METEO, DV-REG, DV-IP32 control panel.

The DV-Head Omega M device is implemented on the Atmel ATmega 1280 microcontroller, which acts as a central processing unit. To expand the number of RS-485 interfaces, up to 2 port expander coprocessors on the ATTINY 2313 microcontroller were used. Data exchange on all RS-485 interfaces occurs in parallel, which increases system performance.

The device has a real time clock.

The board also contains: a control circuit for two relays, 4 unprotected security alarm systems inputs /discrete inputs with noise filters.

An Ethernet interface scheme has been implemented using the USRTCP232-T module, which allows the device to connect to the network via the TCP/IP protocol.

4.2. Appearance and installation of the controller.



Structurally, the controller is made in a housing for mounting on a DIN rail (2DIN). Standard installation on a DIN rail is carried out using a clip on the back of the housing. The housing is opened by pressing on the latch on the side. Connectors for connecting

the control interface, peripheral devices and 12V power supply, pitch 5.01 mm.
Appearance DV-Head Omega M

4.3. Assigning contacts.

Central controller DV-Head OmegaM shown in Figure 3.

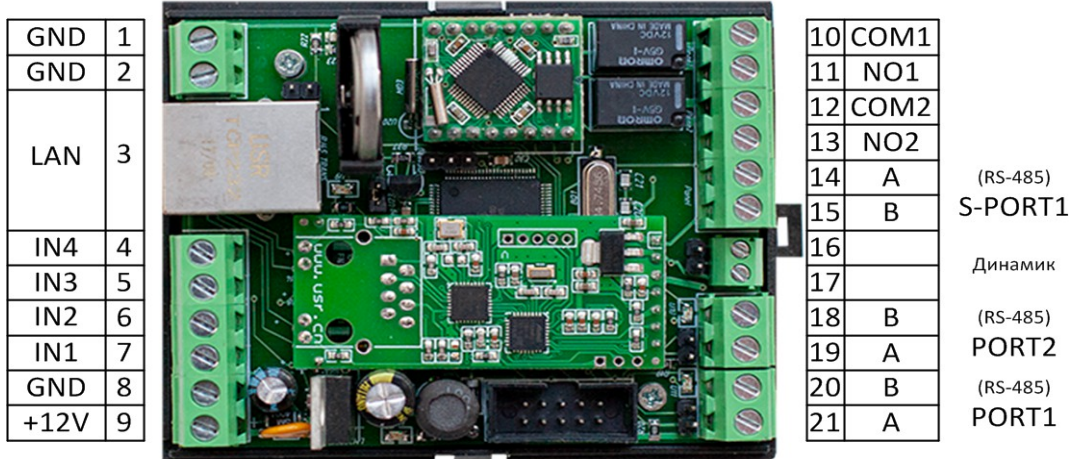


Fig.3 DV-Head Omega M controller pin assignment

The pin assignment is shown in Table 1.

Table 1. DV-Head Omega pin assignmentsM.

cont. no.	Name contacts	Pin assignment
1	GND	GND for digital inputs and OPS inputs
2	GND	GND for digital inputs and OPS inputs
3	LAN	Connector for connecting DV-Head OmegaM to the network by TCP/IP
4	IN1	Connector discrete w/ entrance Yes and whether input a OPS
5	IN2	Connector discrete w/ entrance Yes and whether input a OPS
6	IN3	Connector discrete w/ entrance Yes and whether input a OPS
7	IN4	Connector discrete w/ entrance Yes and whether input a OPS
8	GND	Connector for connecting GND from the power supply
9	+12V	Connector for connecting the supply voltage 12V
10	COM1	Relay contact group output 1 COM
11	NO1	Relay contact group output 1 (normally open)
12	COM2	Relay contact output 2 COM
13	NO2	Relay contact output 2 (normally open)
14	S-PORT1 A	Pin A of the RS485 interface for connection

		DV-IP32 control panels
15	S-PORT1 B	ContactATRS485 interface to connect DV-IP32 control panels
16	speaker	Connector for connecting an external speaker 1.5W 8Ohm
17	speaker	Connector for connecting an external speaker 1.5W 8Ohm
18	PORT2B	ContactBinterface RS485 Port2to connect Division system modules operating via ModBus
19	PORT2 A	ContactAinterface RS485 Port2to connect Division system modules operating via ModBus
20	PORT1 B	ContactBinterface RS485 Portoneto connect Division system modules operating via ModBus
21	PORT1 A	ContactAinterface RS485 Portoneto connect Division system modules operating via ModBus

5. Operating the DV-Head Omega M Controller.

5.1. Connecting modules and devices.

5.1.1. Configuring the TCP/IP module.

The TCP/IP module is configured as Server and comes with the following settings:

IP address : 192.168.1.190

Port : 5014

The USR-TCP232-T24 V5.1.0.1.exe program is used to change the IP address and port number. The view of the program window is shown in Figure 4.

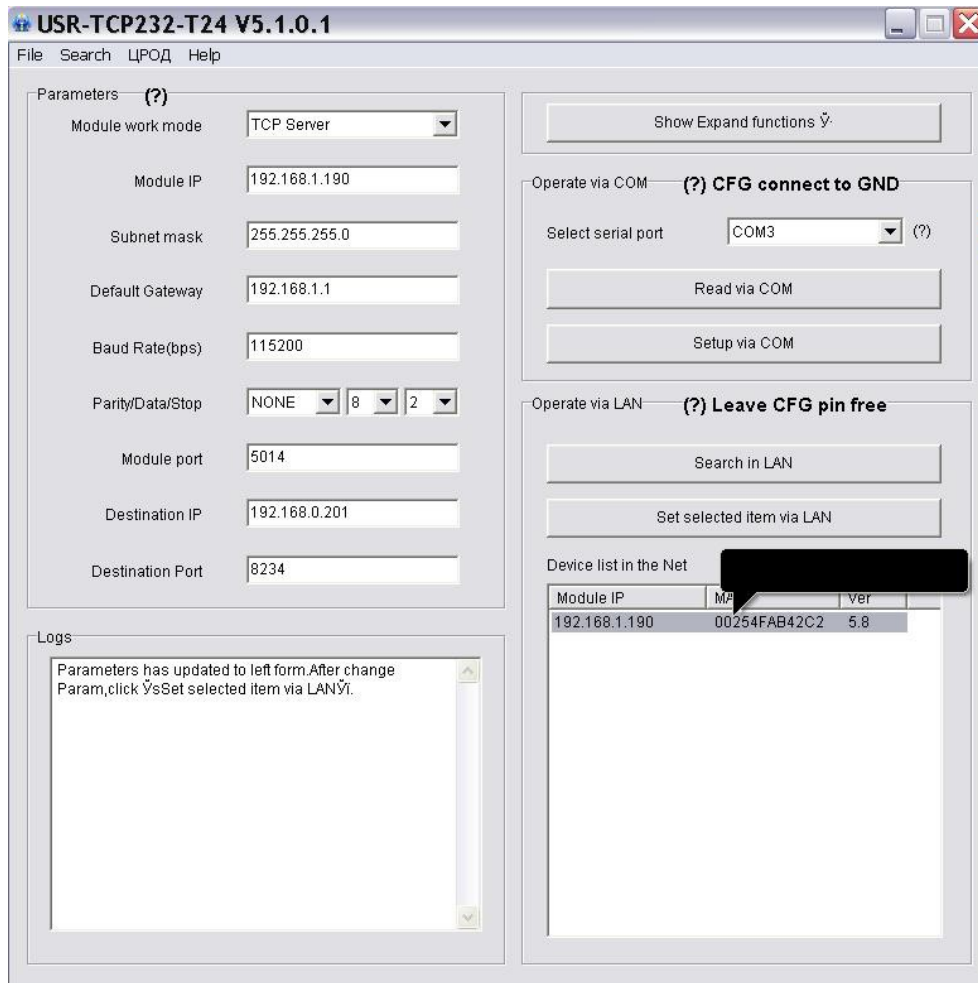


Fig.4 USR-TCP232-T24 V5.1.0.1.exe window view

5.1.2. Connection to discrete inputs and OPS inputs.

Four DV-Head Omega M inputs implemented in a dual-use scheme and can be used as two-state inputs (TTL levels) and as five-state inputs (OPS inputs) with the following states:

- "short circuit", $V < 0.75$,
- "norm", $B > 0.75 \dots < 1.44$,
- "attention", $B > 1.44 \dots < 1.89$,
- "drawdown", $V > 1.89 \dots < 3.47$,
- "break", $B > 3.47$.

The application of each input is determined in the DIVISION Constructor program when configuring the DIVISION system. An example of connecting security sensors is shown in Figure 9.

5.1.3. Connection of Division modules to RS485 interfaces.

When connecting external modules to RS485 interfaces DV-Head OmegaM (Port 1 Port 2) it should be taken into account that the ports one and 2 are equal and allow connection of modules to any ports in any combination. That is, modules can be connected both to different ports, and all to one. Please note that a maximum of 32 modules can be connected to one port.

Tip: Distribute I/O modules evenly across portsRS485 interfaces and you will get the minimum system response time to an input event.

5.1.four. Connection of small panels DV-IP32.

DV-IP32 small indicator panels connect to SPORT port onlyoneRS485 interface. The maximum number of panels connected to the port is 32 pcs.

5.1.5. Connecting an MP3 module.

The MP3 module is designed to play audio messages about the state of the DIVISION system. The MP3 module plays messages to a speaker built into the front panel. An external speaker is connected to pins 17, 18 (see table 1). An external amplifier is connected to the connector 16 and 17(see table 1).

5.1.6.Real time clock setting.

Setting the real time clock is done:

1.Using the DV Monitor program by pressing the DV-Head Omega M time synchronization button. At the same time, in the DV-Head Omega M watch records the date and time of the computer running DV Monitor. Further, the DV Monitor program will synchronize the time of the DV-Head Omega every hour.Mautomatically.

2.Through the DIVISION Global service (via the Internet). At the same time, in the DV-Head M Omega watch the date and time set by the DIVISION Global service is recorded. Further, the DIVISION Global service will automatically synchronize the DV-Head Omega M time every hour.

5.1.7. Front panel of the DV-Head Omega M case.

On the front panel of the DV-Head Omega M case speaker (optional), cooling fan (optional), Reset button and DV-Head Omega M operation LED green light.

5.2. Work as part of the Division system.

When power is applied to the DV-Head Omega M searches for devices connected to the RS485 interfaces, determines the configuration of the DIVISION system and proceeds to the execution of the configuration file. To start DV-Head Omega M in the DIVISION system, it is necessary to write the configuration file to the DV-Head Omega memoryM.The configuration file is prepared and written using the DIVISION Constructor program (see Description).

5.3. Maintenance.

Maintenance of the controller is carried out according to a preventive system. Maintenance work includes:

- ! checking the external state of the controller;
- ! checking the reliability of mounting the controller, the condition of external mounting wires and contact connections.

6. Storage.

Module storage temperature range from -40C to +50 FROM.

When storing the module in rooms with a negative temperature range, it is necessary to keep the device at room temperature (+20C) 30 minutes before the start of operation.

The module storage rooms must be free of acid vapors, alkalis, corrosive gases and other harmful impurities that cause corrosion.

7. Manufacturer's warranties.

The manufacturer guarantees the operability of the device provided that the consumer observes the rules of transportation, storage, installation and operation. The warranty period of operation is 36 months from the date of commissioning, but not more than 40 months from the date of shipment. When sending the product for repair, an act with a description of a possible malfunction must be attached to it.

8. Information about the manufacturer.

“DVC Technologies”

E-mail: info@division.business , **Website:** <https://division.business>

9. Certificate of acceptance and packaging.

Central controller DV-Head OmegaMmanufactured and accepted in accordance with the current technical documentation, recognized as fit for use and packaged by Electronic Interiors LLC.

Responsible for the acceptance and packaging of QCD

MP _____
FULL NAME. year, day, month