

Temperature parameter controller DV-TMPR

Manual



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1. General description

The DV-TMPR controller is designed to measure temperature parameters inside or outside (must be placed in a protected box) premises. 1 remote measuring module is connected to the controller.

The following parameter is measured:

- temperature from -50 to +99 degrees Celsius.

The controller can be used to receive information about the temperature outside as part of a home weather station, as well as to maintain optimal indoor conditions as part of an automated microclimate control system.

A photograph of the device is shown in Pic 1.



Picture 1. DV-TMPR

Compact dimensions and operation in a wide temperature range, easy connection to a computer with a cable up to 1200 meters long makes it easy to install and integrate the controller into existing systems.

2. Specifications.

Table 1. Specification

Controller Addressing	1 to 255
Type identifier	68h
The number of controllers in the segment (on one port) is up	30
Number of measurement points	3
Serial port parameters when working in the system:	
Speed, baud	19200

Evenness	7
Stop bit	even
Control interface	1
ModBus ASCII control protocol	RS485 half duplex
Thermometer - digital, type DS1820 with precision measurements in the range from -10°C to +85°C	0.5°C
Supply voltage, V	01.10.13
Current consumption, no more than	100 mA
Overall dimensions (WxDxH), mm	25x62x25

3. Product composition

Delivery includes:

- 1) DV-TMPR atmosphere parameters controller – 1 pc.;
- 2) DV-TMPR operation manual – 1 pc.

4. Description of the operation of the atmospheric parameters controller DV-TMPR.

4.1. Work algorithm

Atmosphere controller DV-TMPR consists of a microcontroller board installed in the housing (optional) and one sensor: temperature. For greater measurement accuracy, the sensor is placed outside the body of the device. DV-TMPR controller connects to the USB input of a personal computer via a USB / RS485 interface converter when working with the DIVISION Controllers program for testing and writing the address. For regular operation as part of the Smart Home system, the DIVISION controller is connected via the RS485 interface directly to the DIVISION HEAD OMEGA central controller. When using the RS485 interface, the requirements for load capacity and line termination must be observed. No more than 30 controllers should be connected to one port. The DIVISION HEAD OMEGA central controller is configured to work with the DV-TMPR controller using the DIVISION Constructor software.

When the power is turned on, the DV-TMPR controller makes its own settings (address, command reception rate, output status, operation mode), after which it is ready to send meteorological data to the head unit.

Before using the controller for the first time, its address must be set in the DIVISION system using the DIVISION Controllers program. A new unprogrammed controller is supplied by the manufacturer with address 01.

Programming and testing of the module is carried out using the DIVISION Controllers service program.

4.2. Controller Appearance

The atmosphere parameters controller DV-TMPR is made with a remote element to increase the accuracy of temperature sensor measurement (cable 5-15cm). The DV-

TMPR controller can be connected to a personal computer via a USB/RS485 interface converter in half duplex mode.

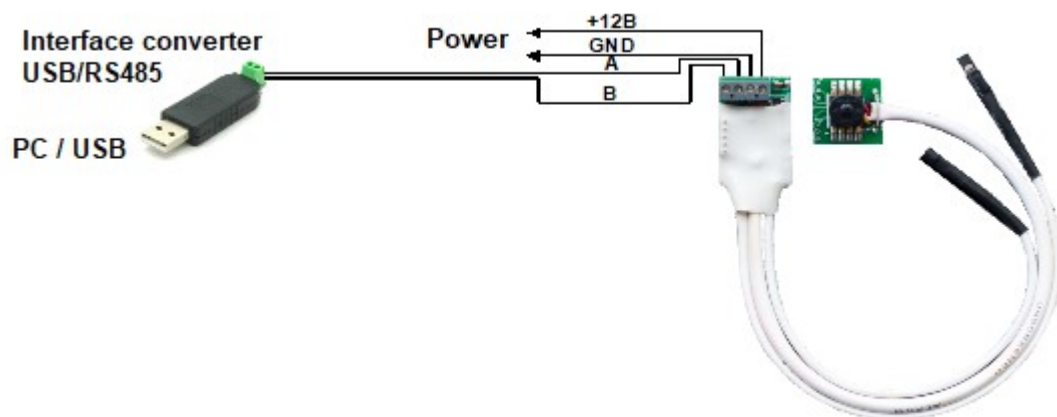
If necessary, the sensor can be removed and used with an extension cable at a distance of up to 5m. It is recommended to use a shielded twisted pair cable as an extension cable.

4.3. Operating modes.

Atmosphere controller DV-TMPR has two modes of operation:

- testing and addressing;
- as part of the DIVISION system.

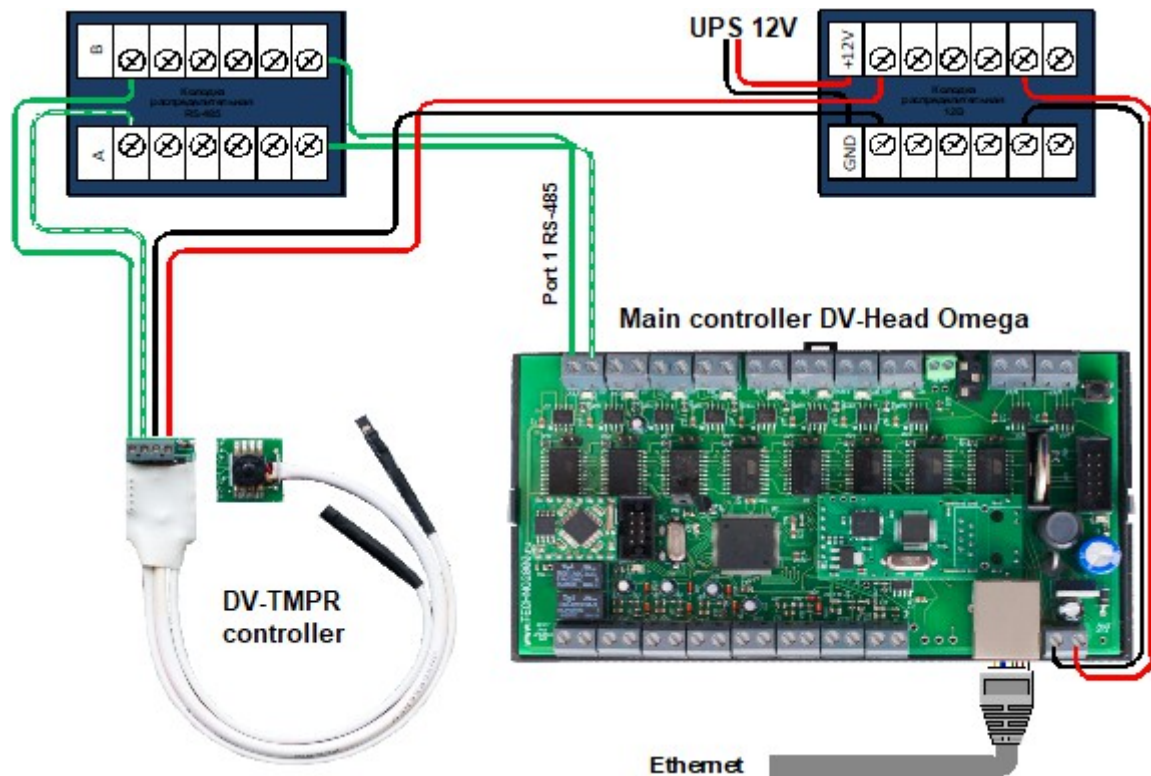
Testing and addressing mode: used when checking the controller's performance, as well as for writing a personal address to it. Setting the address is necessary for further identification of the controller in the DIVISION system. Any address from 1 to 235 is allowed. The controller is connected to the USB input of the computer using a USB/RS485 interface converter according to the scheme shown in Pic 2.



Picture 2 Scheme of connecting the DV-TMPR controller to the USB input personal computer

The DIVISION Controllers program is installed on a personal computer, which can be downloaded from the website of the DVC Technologies of Companies: division.business → Shop → *Hardware and software* → *Software* → *DIVISION controllers*. In the same section of the site is a description of the program. Please read this manual before using DIVISION Controllers.

As part of the DIVISION system: description of the operation of the controller as part of the system DIVISION see section 4.1 of this manual. Controller connection diagram DV-TMPR to the DIVISION HEAD OMEGA central controller is shown in Picture 3.



Picture 3 Standard DV-TMPR controller wiring diagram in DIVISION system to RS485 central controller DV-HEAD OMEGA

4.4. Maintenance.

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

- checking the external state of the device;
- performance check in accordance with clause 4.3 of this manual;
- checking the reliability of the module fastening, the condition of external mounting wires and contact connections

5. Storage.

Module storage temperature range from -40°C to $+50^{\circ}\text{C}$.

When storing the module in rooms with a negative temperature range, it is necessary to keep the device at room temperature ($+20^{\circ}\text{C}$).

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

6. 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.

7. Manufacturer information

DVC Technologies Website: <https://division.business>

8. Certificate of acceptance and packaging.

The DV-TMPR controller is manufactured and accepted in accordance with the current technical documentation, recognized as fit for use and packed by DVC Technologies.

Responsible for receiving and packaging

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FULL NAME. year, day, month