

**Atmosphere parameters controller:  
temperature, pressure and humidity**

# **DV-METEO**

Manual



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## 1.General description

The DV-METEO controller is designed to measure atmospheric parameters inside and outside(must be placed in a protected box)premises. 3 remote measuring modules are connected to the controller.



The following parameters are measured:

- temperature from -50 to +99 degrees Celsius;
- humidity from 1 to 100%;
- pressure from 90 to 115 KPa (620.6-815.9 mm Hg).

The controller can be used to receive information about the weather 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 Picture 1.

*Picture 1 Appearance of DV-METEO*

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. Specifications

Controller Addressing	1 to 255
Type identifier	66h
The number of controllers in the segment (on one port) is up to	30
Number of measurement points	3
Serial port parameters when working in the system:	
Speed, baud	19200
Eveness	7
Stop bit	even
Control interface	1
ModBus ASCII control protocol	RS485 half duplex
Pressure sensor type	MPXA 4115A
Accuracy in the range 0-85°C, not more than	1.5%
Humidity sensor type	HIH-4010
Relative Humidity Measurement Accuracy at a temperature of 25°C, no more than	3.5%

Thermometer - digital, type DS1820 with measurement accuracy 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) controller of atmospheric parameters DV-METEO – 1 piece;
- 2) operation manual - 1 pc.

### **4.Description of the operation of the atmospheric parameters controller DV-METEO.**

#### **4.1. Work algorithm**

The DV-METEO atmospheric parameter controller consists of a microcontroller board installed in the case (optional) and three sensors: pressure, humidity and temperature. For greater measurement accuracy, the sensors are placed outside the body of the device. The DV-METEO controller connects to USB input of a personal computer through 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 using the DIVISION Constructor software.

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

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 by using the DIVISION Controllers service program.***

#### **4.2. Appearance and installation of the controller**

The DV-METEO atmospheric parameter controller is made with remote elements to improve the accuracy of measurements of temperature, humidity and pressure sensors (cable 5-15 cm). The DV-METEO controller can be connected to a personal computer via a USB/RS485 interface converter in half duplex mode.

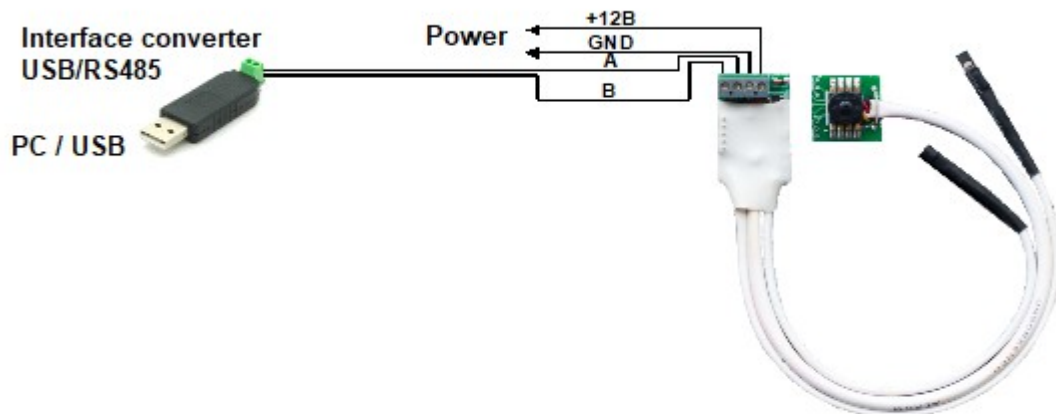
If necessary, the sensors can be removed and used with an extension cable at a distance of up to 5m. It is recommended to use a shielded twisted pair cable as an extension cable.

### 4.3. Operating modes.

Atmospheric parameter controller DV-METEO has two modes of operation:

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

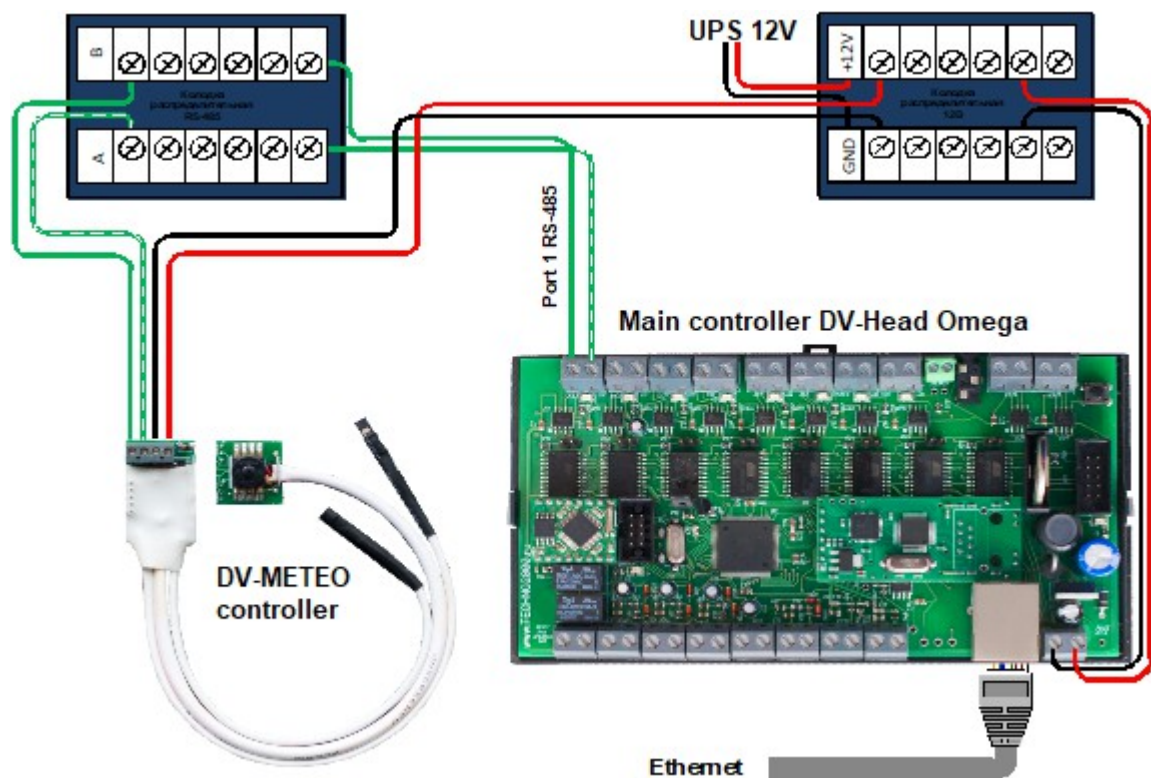
**Testing and addressing mode:** used when checking the controller's performance, as well as for writing a personal address to it. Setting the address is necessary for further identification of the controller in the DIVISION system. Any address from 1 to 235 is allowed. The controller is connected to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



**Pic. 2 Scheme of connecting the DV-METEO 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](http://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. The connection diagram of the DV-METEO controller to the DIVISION HEAD OMEGA central controller is shown in Picture 3.



**Pic.3 Standard scheme for connecting the DV-METEO controller in the DIVISION system to the RS485 of the DV-HEAD OMEGA central controller**

#### **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 mounting the module, the condition of external wiring and contact connections

#### **5. Storage.**

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

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.**

DV-METEO controller made and accepted in accordance with the current technical documentation, recognized as fit for use and packed by DVC Technologies.

Responsible for receiving and packaging

OTK

MP \_\_\_\_\_

FULL NAME. year, day, month \_\_\_\_\_