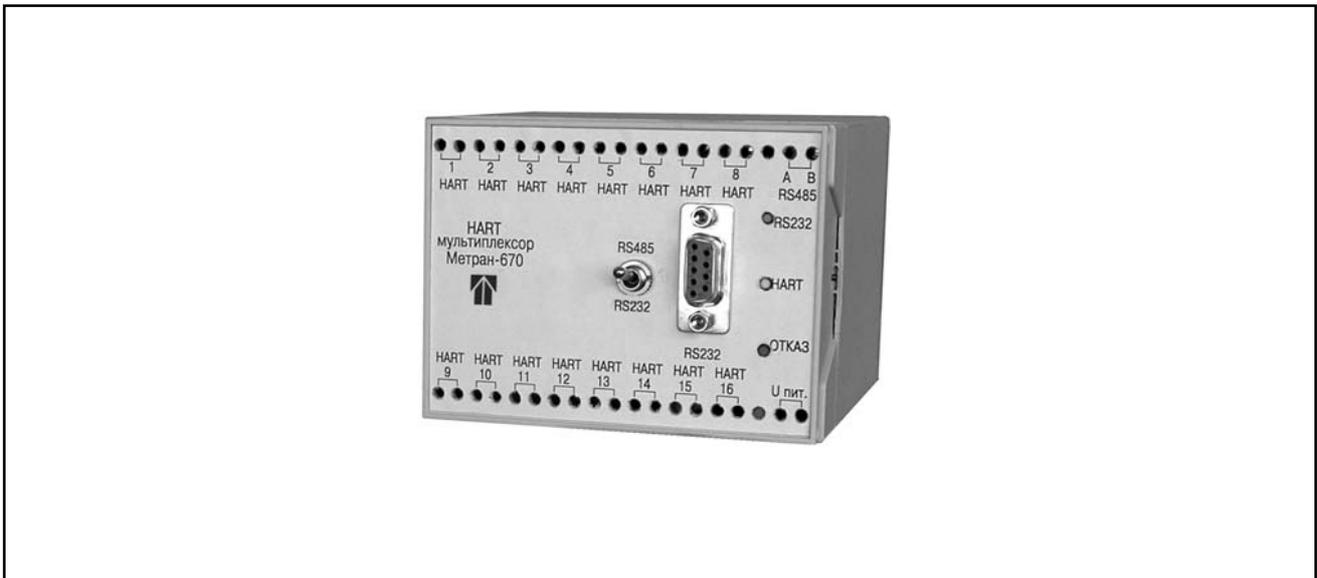


Metran-670 HART Multiplexer



- **8- or 16-channel HART Multiplexer with RS485/RS232 control interface**
- **Possibility to connect up to 15 devices to each HART-input channel**
- **RS485 and RS232 ports are galvanically isolated from HART lines**
- **Intrinsically safe version:**
 - **Explosion protection type: “intrinsically safe electrical circuit”,**
 - **Explosion protection marking: [Exia] IIC**
- **Used with MUX-Master software or HART ORS-server system**
- **HART Multiplexer is not a measuring device**

Metran-670 HART Multiplexer (further Multiplexer) is designed for connection of PC or process control systems to Metran-100, 3051 Smart Pressure Transmitters, Metran-280 Smart Temperature Transmitters and other HART devices.

The Multiplexer provides transformation of HART data signal into RS485 or RS232 interface digital signal, and analog 4-20 mA signal of current loop can be used by registration and control system.

The following options of Multiplexer application are available:

- MUX-Master software (developed by Metran IG) for operation from dedicated PC;
- HART ORS server for integration into SCADA systems.

BASIC SPECIFICATIONS AND PARAMETERS

- Number of HART channels: 8, 16. Load capacity of each channel: 15 transmitters in multipoint mode
- Communication with control system: by HART-protocol at RS485 or RS232 physical layer. Available number of multiplexers connected into one RS485 line: up to 31
- Sine-wave HART signal amplitude, frequency: 1200 or 2200 Hz - (0.3 ± 0.1) V
- Multiplexer input impedance (HART input), min: 1100 Ohm
- Multiplexer output impedance (HART output), max: 700 Ohm
- Multiplexer detects HART signal at amplitude over 120 mV and does not respond to HART-signal at amplitude less than 80 mV
- Multiplexer inputs do not load 4-20 mA dc line
- RS485 and RS232 outputs are galvanically isolated from HART lines, withstand ac test voltage of 1500 V minimum
- Supply: dc power supply, voltage of 9-18 V, current consumption, max: 50 mA
- Metran-670 HART Multiplexer is made in a plastic housing, may be mounted on DIN rail
- Multiplexer overall dimensions: 100x75x120 mm
- Multiplexer weight, max: 0.4 kg

MULTIPLEXER CONNECTION

The Multiplexer is connected to PC with the help of DB9-DB9 cable (RS232 interface), or via RS485 interface by two-wire line, using RS232/RS485 interface converter. The Multiplexer is connected to transmitter line (HART device) with the help of wires and appropriate connector.

EXTERNAL WIRING DIAGRAMS

Abbreviations:

PS - dc Power Supply;

PS-Ex - Power Supply of Explosion-proof Version;

PC - Personal Computer;

COM - Serial Port;

HART-MUX - Metran-670 Multiplexer;

RI - Total Resistance of all loads in a control system (recording/indicating device, etc.), min: 250 Ohm.

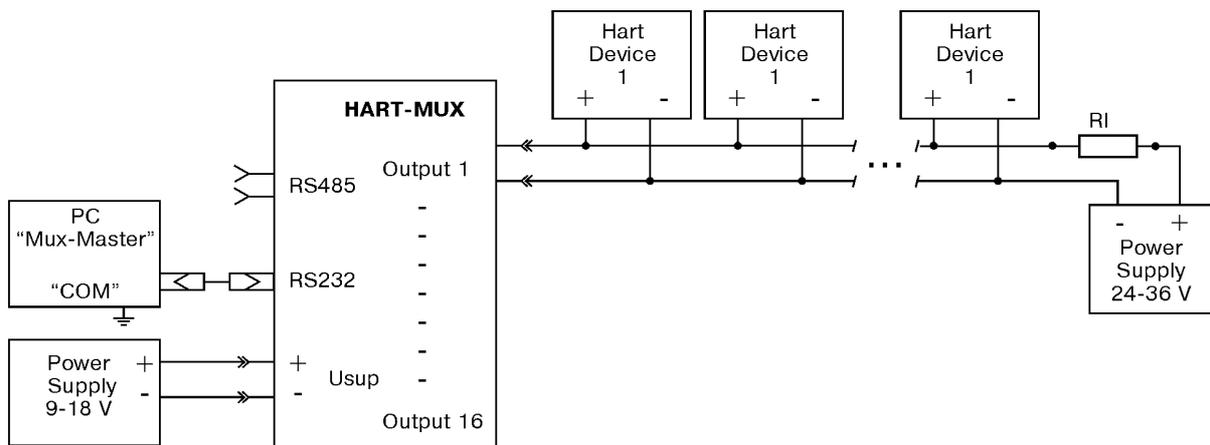


Fig.1. Multiplexer Wiring Diagram at Operation via RS232 Interface.

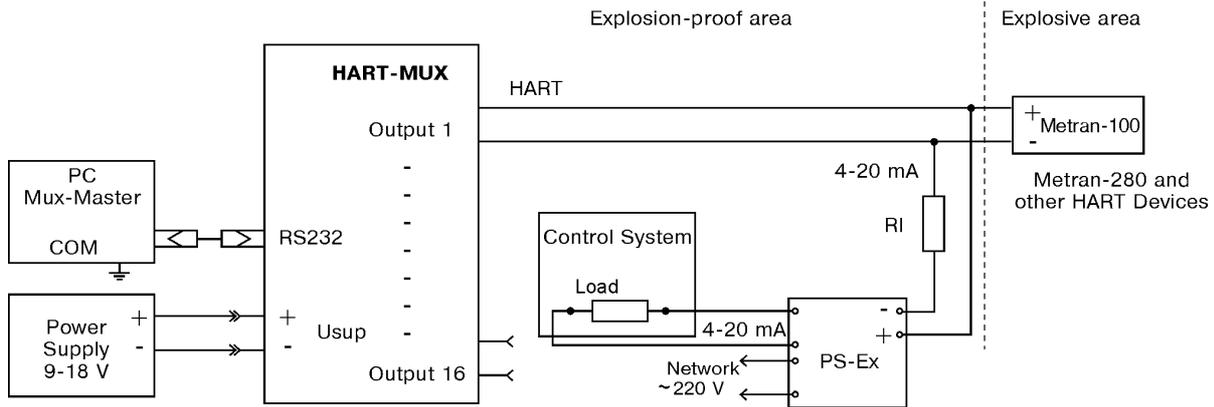


Fig.2. Multiplexer Wiring Diagram to Intrinsically Safe Circuit Using Power Unit with Intrinsically Safe Input.

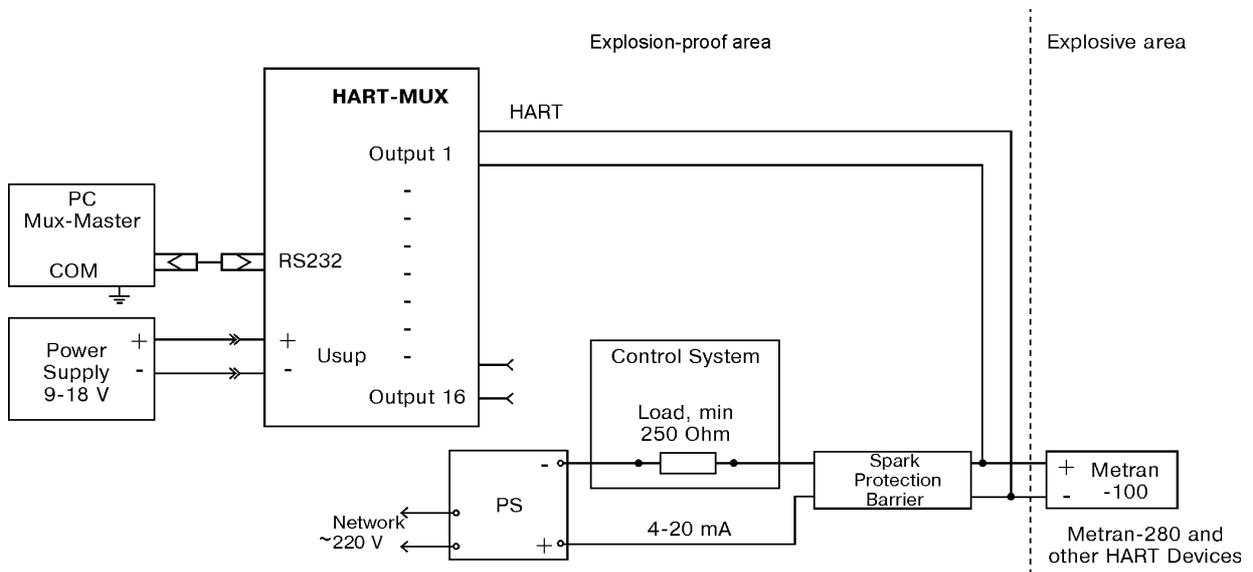


Fig.3. Multiplexer Wiring Diagram to Intrinsically Safe Circuit Using Spark Protection Barrier not Passing HART Signal.

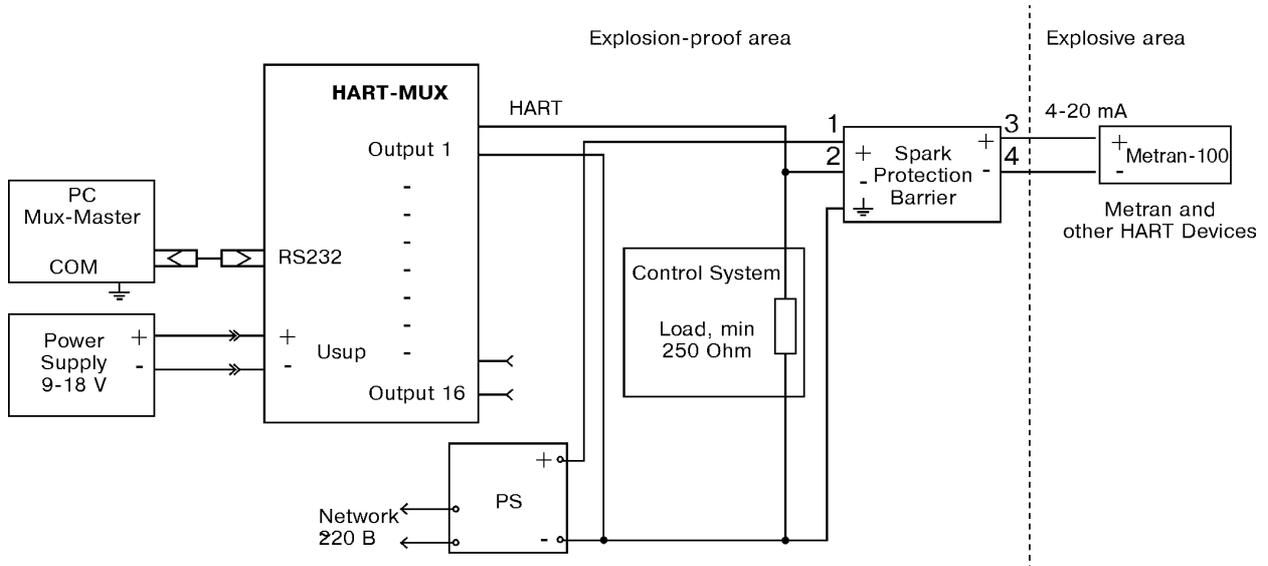


Fig.4. Multiplexer Wiring Diagram to Intrinsically Safe Circuit Using Spark Protection Barrier Passing HART Signal.

OPERATION CONDITIONS

- Climatic effects stability: UHL version 3.1 per GOST 15150, for operation at 0 to 50°C of ambient temperature and 80% of ambient humidity at 35°C.
- Mechanical effects stability: vibration-proof version V1 per GOST 12997.
- Dust and water tightness: IP30 per GOST 14254.
- The Multiplexer keeps operable state, provides faultless data exchange between PC and a transmitter under magnetic field of alternating current with frequency of 50 Hz and intensity up to 400 A/m.

RELIABILITY

Average service life: 12 years
Mean time between failures, min: 50000 h.

WARRANTY

Warranty period: 18 months from the date of commissioning.

DELIVERY SET

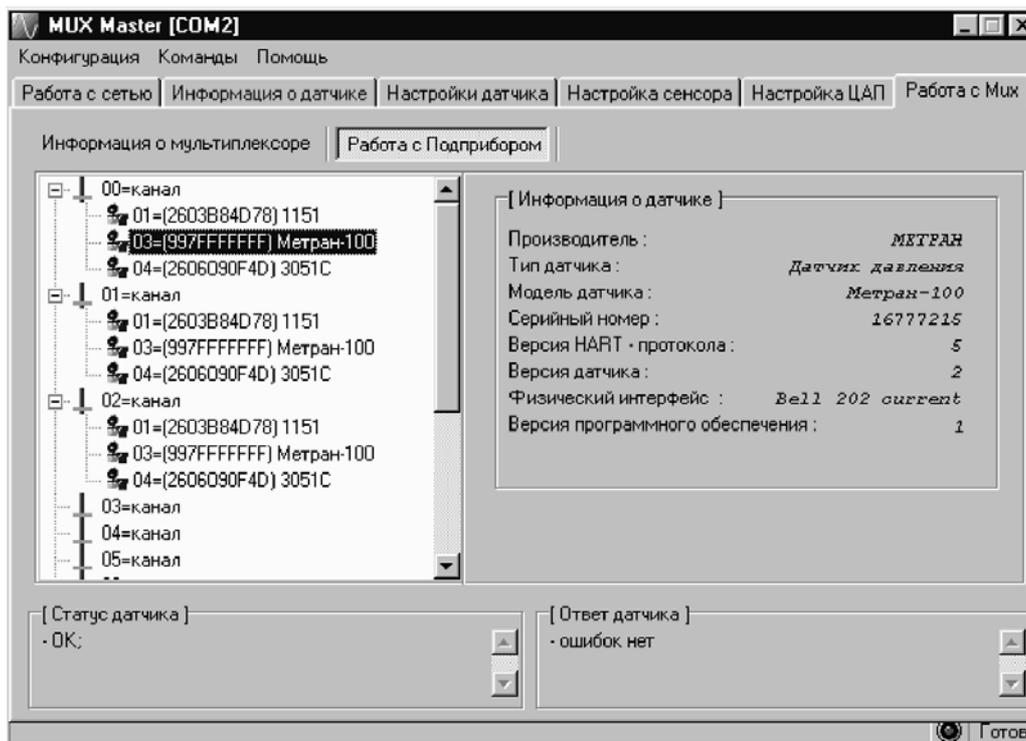
1. Metran-670 HART Multiplexer	1 unit
2. Product Data Sheet 5199.000.00 PS	1 copy
3. Cable DB9-DB9	1 unit
4. MUX-Master software or HART ORS-server (refer to relevant sections)	1 unit

ORDERING INFORMATION

Metran-670 - 16 - Ex - MUX-Master - TU 4219-045-12580824-2003				
1	2	3	4	5

1. Multiplexer type.
2. Number of HART-input channels (8, 16).
3. For explosion-proof version only.
4. MUX-Master software or HART ORS-server.
5. Specification.

MUX-Master Software



MUX-Master configuration program is designed for operation with Metran-670 HART Multiplexer and is used for setup of Metran-100 Smart Pressure Transmitters, Metran-280 Smart Temperature Transmitters and other HART devices.

MUX-Master program performs the following operations:

- search of devices, connected via RS-485 interface and supporting HART data link layer;
- search of devices, connected to multiplexer HART inputs;
- readout of process variables from the devices, connected to multiplexer HART input;
- readout of information about HART device and sensor, connected to multiplexer HART input;
- test of the device connected to multiplexer HART input;
- setup of the device, connected to multiplexer HART input;
- setup of device sensor, connected to multiplexer HART input;
- setup of DAC of the device, connected to multiplexer HART input.

Minimum hardware requirements:

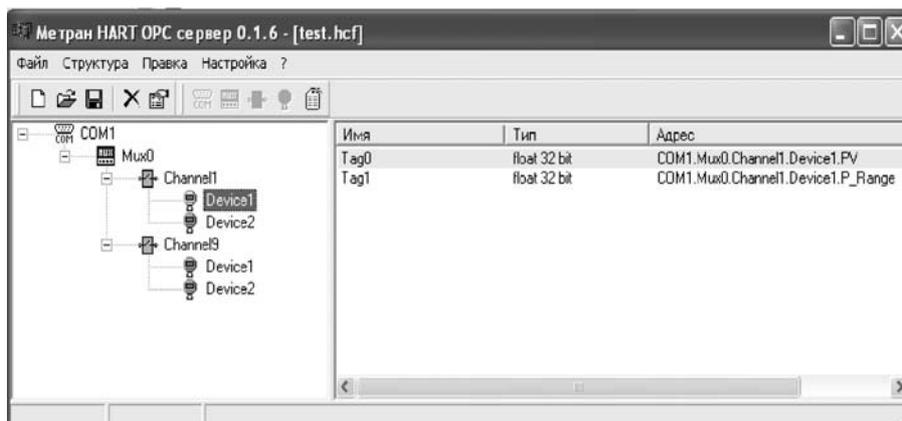
- Pentium processor, 16 MB RAM;
- VGA 640x480 video display adapter, 16 colors;
- Free asynchronous communication port (COM-port);
- 2 MB free space on HD.

Software: OS Microsoft Windows 9x/ Windows NT.

MUX-Master operates with arbitrary HART device within HART protocol standard commands.

Detailed description of MUX-Master software is given in the Operation Manual. The program is supplied on CD.

HART OPC-Server



HART OPC-server is designed to access SCADA systems and any OPC-Clients to the data of field HART devices via HART Modem or Metran-670 HART Multiplexer.

HART OPC-server gives access to the following data of field devices:

- Process variables;
- Current;
- Upper and lower range limits;
- Damping time;
- Measurement units of process variables;
- Sensor URL and LRL;
- Message.

HART OPC-server has the following characteristics:

- Support of HART network configuration with connection of devices to HART Modem or HART Multiplexer;

- Up to 1000 devices support;
- Automatic downloading of the latest configurations;
- Transmission of data reliability status to OPC-Clients.

Minimum hardware requirements:

- Pentium-II processor (366 MHz), 64 MB RAM;
- Free asynchronous communication port (COM-port);
- 16 MB free space on HD.

Software: OS Microsoft Windows NT, Windows 2000, Windows XP.

HART OPC-server corresponds to DA 2.0 ORS Foundation specification.

Detailed description of HART OPC-server operation is given in the Operation manual. The program is supplied on CD.