VEGA
ABSOLUTE

PORT REPLICATOR

VEGA RP-2

User Manual

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CONTENT

INTRODUCTION

This manual is designated for Vega RP-2 port replicator (hereinafter – the device) manufactured by Vega-Absolute OOO and provides information on powering procedure, and functions of the device.

This manual is targeted at specialists which familiar with installation and repairing procedures rules for motor transport and had holding of professional knowledges in the field of electronic and electrical equipment of different vehicles.

Vega-Absolute OOO reserves the right to make changes to the manual related to the improvement of equipment and software, as well as to eliminate typos and inaccuracies, without prior notice.

1 DESCRIPTION AND OPERATION

Vega RP-2 port replicator is designed for connecting to the monitoring devices of the Vega MT series for extending the number of device outputs and inputs.

RP-2 may be connected through RS-232, RS-485 or UART interface and has 4 open drain outputs and 6 multifunctional inputs.
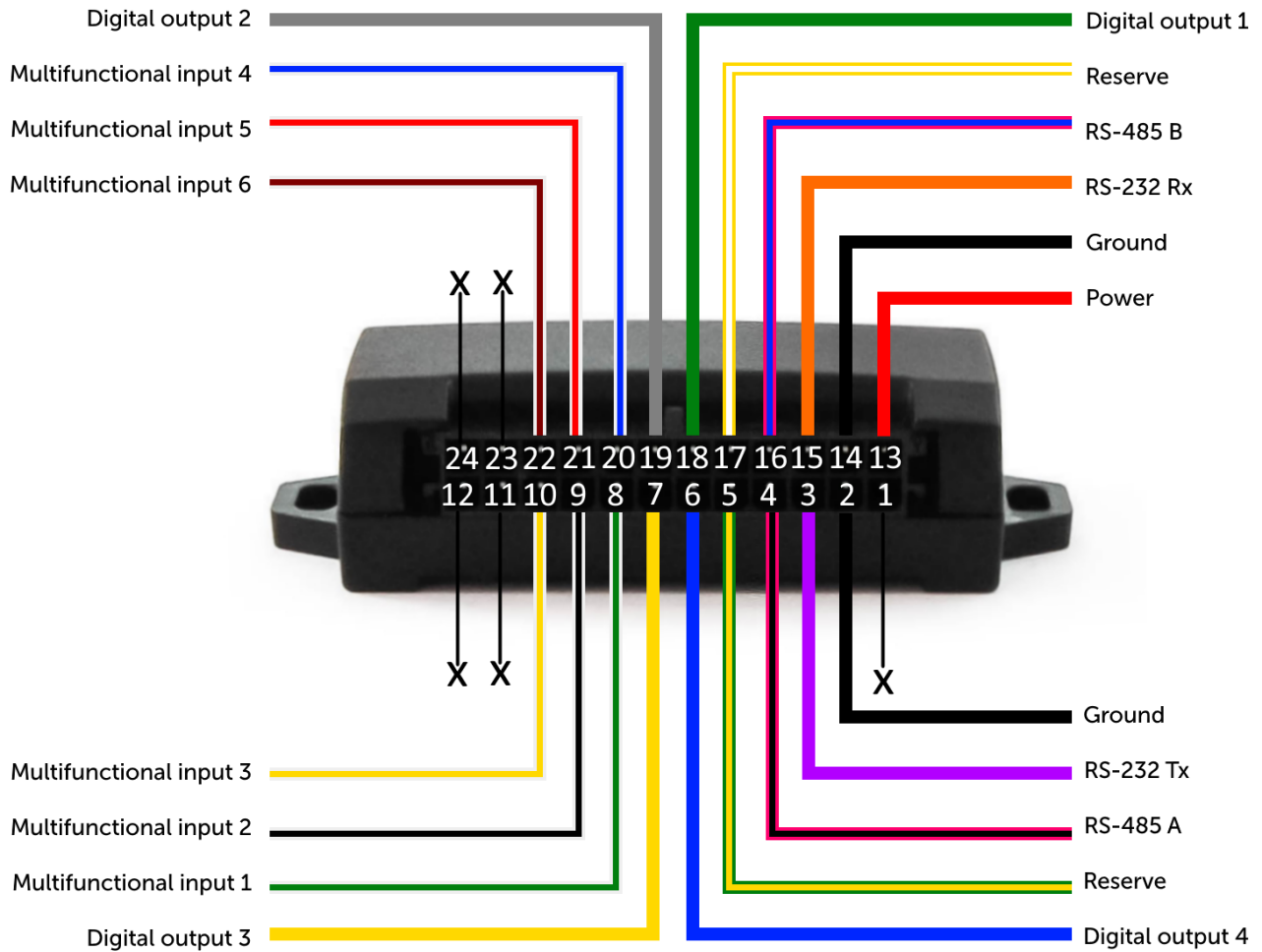
You can set up the inputs and outputs of the RP-2 through the "Configurator" application. In this case, you should connect to the monitoring device that is supposed to be expanded.

2 SPECIFICATION

Parameter	Value
Housing dimensions, mm	66x35x16
Ingress protection rating	IP53
Operating temperatures, °C	– 40…+85
External power, V	9…36
Active mode consumption, mA	up to 15
Sleep mode consumption, mA	up to 5
RS-232	1
RS-485	1
UART	1
Digital outputs	4
Multifunctional inputs	6

3 OPERATION BEGINNING

CONTACTS DESCRIPTION

Digital output 2
Multifunctional input 4
Multifunctional input 5
Multifunctional input 6

Digital output 1
Reserve
RS-485 B
RS-232 Rx
Ground
Power

24 23 22 21 20 19 18 17 16 15 14 13
12 11 10 9 8 7 6 5 4 3 2 1

Multifunctional input 3
Multifunctional input 2
Multifunctional input 1
Digital output 3

Ground
RS-232 Tx
RS-485 A
Reserve
Digital output 4

Contact	Wire color	Description
1 / 13	No / Red	Power +
2 / 14	Black	Ground
3 / 15	Violet / Orange	RS-232 Tx / RS-232 Rx
4 / 16	Pink + Black / Pink + Blue	RS-485 A / RS-485 B
5 / 17	Green + Yellow / Yellow + White	UART TX/RX
18	Green	Digital output 1
19	Gray	Digital output 2
7	Yellow	Digital output 3
6	Blue	Digital output 4
8	White + Green	Multifunctional input 1
9	White + Black	Multifunctional input 2
10	White + Yellow	Multifunctional input 3
20	White + Blue	Multifunctional input 4
21	White + Red	Multifunctional input 5
22	White + Brown	Multifunctional input 6
11 / 12 / 23 / 24	*No*	*Do not used*

DEVICE INDICATION

The device has one red LED indicators which shows the external power status.

LED signal		Meaning
▬▬▬	Always red	External power connected
● ● ●	Red flashes	Data exchanging through one of the interfaces
● ●	Short red flashes	Sleep mode (the transition between the "Sleep" and "Active" modes occurs synchronously with the monitoring device)

CONNECTION TO THE MONITORING DEVICE

RP-2 connection is carried out via RS-232, RS-485 or UART interfaces, depending on the model of the monitoring device, to which the port replicator is intended. In this case, the monitoring device must already be connected and configured (see "User manual" for your device). To connect RP-2 to the device, do the following:

1. Connect the connector with wires to the RP-2.
2. Connect another end of the connector to the monitoring device.
3. Connect an external power with voltage of 9...36 V (board net) to the RP-2. After power connection the red LED will must become glowing.
4. Run the Configurator application on the PC, press "Connect" button and choose the connection method like "Connect through TCP".
5. Choose your device in the list.

6. On the left menu choose "Settings", "Inputs/Outputs" tab.

7. Choose the connection type for your device in the line "Input/output extension unit" - "Connected to": RS-232, RS-485 or UART.

INPUTS/OUTPUTS

The "Inputs / Outputs" tab allows you to configure RP-2 inputs and outputs in a specific way.

Multifunctional input - has the settings "Input Type": Digital, Frequency, Pulse, Analog, - and "Active Level": Low / High.

In **analog** mode, the input voltage is measured. Such an input can be used for sensors whose readings vary in a certain range.

In **digital** mode, the input signal level (0 or 1) is measured. Such an input can be used for logic sensors, the readings of which are determined by two states (on/off).

In the **frequency** mode, the frequency of the pulse signal is measured. Such an input, for example, is convenient to use for a car tachometer.

In **pulse** mode, the number of pulses at the input is counted. Such an input can be used for flow rate sensors, for example, fuel consumption.

In the settings of multifunctional inputs in the "Configurator" application, in addition to selecting a mode for each input, there is a parameter called "Active Level". It can take the value "low" and "high" and characterizes the magnitude and direction of the input tightening.

| Input type	Low active level	High active level
Analog	Pull-down to the ground 22 kOhm	Pull-down to the ground 22 kOhm
Digital	Pull-up to external power 44 kOhm	Pull-down to the ground 22 kOhm
Pulse	Pull-up to external power 44 kOhm	Pull-down to the ground 22 kOhm
Frequency	Pull-up to external power 44 kOhm	Pull-down to the ground 22 kOhm

ACTUATORS

Actuators are connected to the device via digital outputs 1...4, which are of the type "Open drain".

Permissible load on each digital output 0.5 A

To increase the load on the outputs of the device, you must use an external relay. The relay connection diagram is shown below.

Direct current diode 3A and reverse voltage not less than 200V
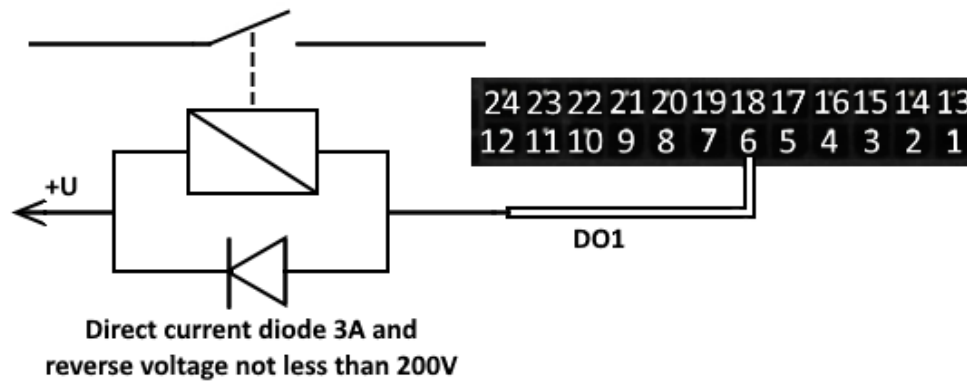
4 STORAGE AND TRANSPORTATION REQUIREMENTS

Port replicators shall be stored in the original packaging in heated room at temperatures +5°C to +40°C and relative humidity less than 85%.

The device shall be transported in covered freight compartments of all types at any distance at temperatures -40°C to +85°C. After transporting the devices at low temperatures, it is recommended to hold them at room temperature for 24 hours before starting operation.

5 CONTENT OF THE PACKAGE

The port replicator comes with the following items.

Port replicator Vega RP-2 – 1 pc.

Wire connector – 1 pc.

Factory certificate – 1 pc.

6 WARRANTY

The warranty period for the port replicator is 36 months from the date of sale.

The manufacturer is obligated to provide repair services or replace the failed device during 36 months from the date of sale.

The consumer is obliged to comply with the conditions and rules of transportation, storage and operation specified in this user manual.

Warranty does not apply to:

- the device with mechanical, electrical and/or other damages and defects caused by violation of the transportation, storage and operation requirements;

- incomplete devices;

- the device with traces of repair performed not by the manufacturer's service center;

- the device with traces of oxidation or other signs of liquids leaking inside the device.

In the event of a warranty claim, contact the service center:

113/1, Kirova Str., Novosibirsk, 630008, Russia.

Tel.: +7 (383) 206-41-35.

vega-absolute.ru

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