

A general features description of the device EasyHomePLC-5.1 housing "DIN-9":

1) This product is a programmable logic controller with ethernet, embedded 32 inputs and 25 outputs (including 9 power switch relays).

2) Overview:

- consists of Board I/O and CPU Board

- Board I/O provides 32 channels of inputs and 25 channels of outputs, the power supply system for sensors, isolation and protection of sections, the ports 2xRS232 2xRS485 with isolated power supply.

- The CPU Board consists of the Texas Instruments processor, Ethernet port, Flash memory, and pin connectors with multifunctional ports.

- Expansion built-in modules are in designing: WiFi, IR gateway, AudioMultiRoom, analog outputs 0-10V, ZigBee modem, GSM modem, extra Flash memory.

3) Inputs and outputs:

3.1) 16 inputs **DI - digital input**: binary signal range 0..2v is logical "0", binary signal range 9..60V logic "1".

- for connection of switches, motion sensors, leakage detectors and other contact detectors.

3.2) 16 inputs **ADI - analog and binary input**: have additionally a function of measuring voltage 0..10V

- for connecting sensors temperature, light, humidity, pressure, etc.

3.3) 9 outputs **DO - digital output**, power bistable relays with load capacity 16A 250V. Divided into 3 groups of 3 relays with shared power contact and a group of pads neutral

- for direct connection of a sources and loads. Load capacity of each individual or group terminal is 16A.

3.4) 9 outputs **DO - digital output** signals to the connector X4 from the transistor switches "open collector"

- for connection to the block of additional relays "Ext9Relay" or other loads with current up to 0.2A in a potential group "PowerSupply 18..27V DO".

3.5) 6 outputs of isolated group **LED dimmers** - for connection of loads powered by voltages of 5..32V with a current up to 1.4A. These outputs can regulate LED strips and similar adjustable loads or works in **DO** mode. It uses LSS-PWM (intelligent Low Side Switches with Pulse-Width Modulation).

1.6) 1 output low side switch for connection of GSM modem powered by voltages of 5..32V with a current up to 0.2A in a potential group "PowerSupply 18..27V DO".

4) Internal structure:

4.1) On-Board I/O there are 4 REGISTER 8x**DI** (including the identity) and 4 REGISTER 8x**DO** (to control bistable relays and external loads), two chips 8ch ADC 12bit resolution for **ADI**.

4.2) As the data bus between the REGISTERS, ADC, and processor Board uses isolated communication lines SPI signal amplitude 5V.

4.3) The Outputs of the block 6 intelligent adjustable keys (**LED dimmers**) are controlled directly from the processor, through the optoisolation.

4.4) To control the data bus and for detecting interference and errors when sending/receiving data using the diagnostic mechanism - reverse reading of transmitted information, or reread the information received on channels **Diag DO**, **Diag DI**, **Diag AI**. On the end of the data bus on Board I/O are connected chip terminators.

4.5) To enable autodetection of the model in the software of the processor is used 1st REGISTERS DI "Model ID Selector" with 7 soldered/unsoldered chip-resistors.

5) Variations on the Assembly of the device:

5.1) Modul 9 additional relays "Ext9Relay" connected via connector X4 to the controller.

5.2) It is Possible not to put built-in power supply 10W 110/230V if you intend to use only external power supply 18..32VDC.

5.3) In the economy versions, you can abandon DC-DC converters and isolation of segments of the system from each other, and use external power 12V.

5.4) The part of pads of the section **DI** and **ADI** in the Assembly can be connected to power supply **DI output 12V or 0V** by chip jumpers.

5.5) You Can set the chip jumpers for combining the power of section **PowerSupply DO 18..27V** and the section of **LED dimmers** .

5.6) It is possible to abandon of the external chip ADC and direct connect analog inputs 8x**AI** on Processor Board without insulation section **DI** for using build in CPU ADC.

5.7) It is possible to install a more powerful DC-DC converter for sensor section **DI** and **ADI** - 12V 500mA.

6) Expected assembly outputs:

6.1) "Full" - Ethernet, 9 built-in relays **DO**, 6 channels **LED dimmers**, 1 modem Power, 16 channel **DI** , 16 channels **ADI**, 2xRS232 and 2xRS485 ports.

6.2) "Block 9 relay" - Module 9 additional relays "Ext9Relay".

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					Санкт-Петербург				
Изм.	Код	Лист	№ док	Подпись	Дата	EasyHomePLC-5	Страница	Лист	Листов
Разраб.	Забоев				22.05.18		РП	0	
Проверил									
Утвердил						Description	000 "Новый Дом"		
ГИП									