

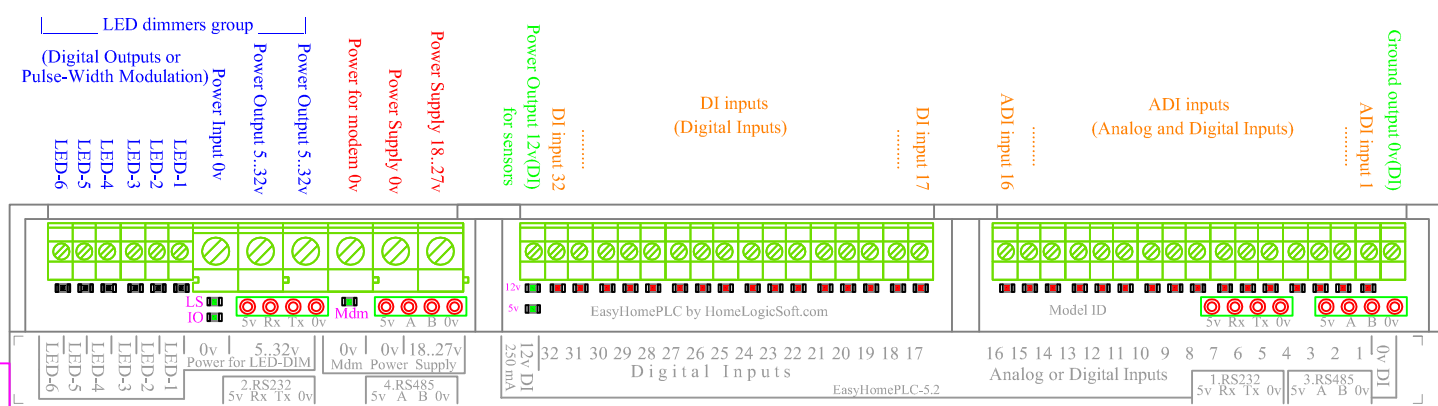
A general features description of the device EasyHomePLC-5.2E housing "DIN-9":

- 1) This product is a programmable logic controller with ethernet, embedded 32 inputs and 34 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 34 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 or Espressif 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.
 - 3.4) 18 outputs **DO - digital output** signals to the connector X4 and X5 from the transistor switches "open collector"
- for connection to the two blocks 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).
 - 3.6) 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 5 REGISTER 8x**DI** (including the identity) and 5 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) Expected assembly outputs:
 - 5.1) "EasyHomePLC5.2" - Ethernet, 9 built-in relays **DO**, 6 channels **LED dimmers**, 2xRS232 and 2xRS485 ports, 1 modem Power, 16 channel **DI** , 16 channels **ADI**, 18 **DO** for 2 of Block 9 relay.
 - 5.2) "Block 9 relay" - Module 9 additional relays "Ext9Relay".
 - 5.3) "EasyHomePLC5.2E" - Ethernet, 9 built-in relays **DO**, 6 channels **LED dimmers** OR 1xRS232 and 2xRS485 ports, 1 modem Power, 16 channel **DI** , 16 channels **ADI**, 18 **DO** for 2 of Block 9 relay.

EasyHomePLC					
Санкт-Петербург					
Изм.	Код	Лист	№ док.	Подпись	Дата
Разраб.	Забоев				07.06.22
Проверил					
Утвердил					
ГИП					
EasyHomePLC-5.2x					Страница
Description					Лист
000 "Новый Дом"					Листов
					РП
					0

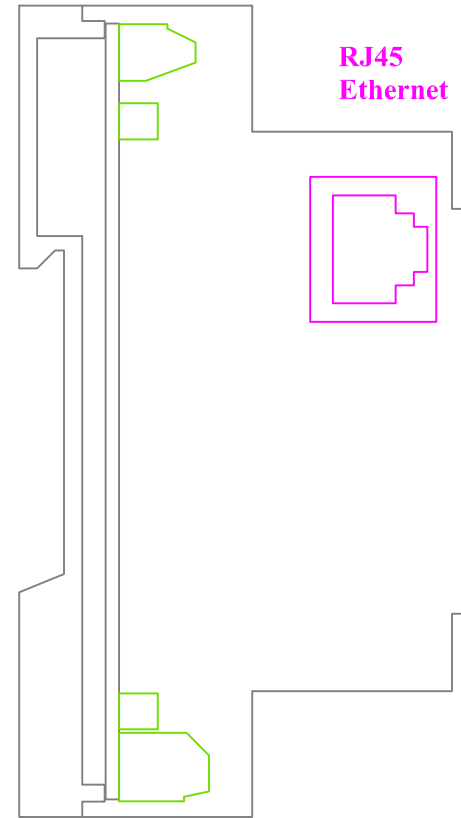
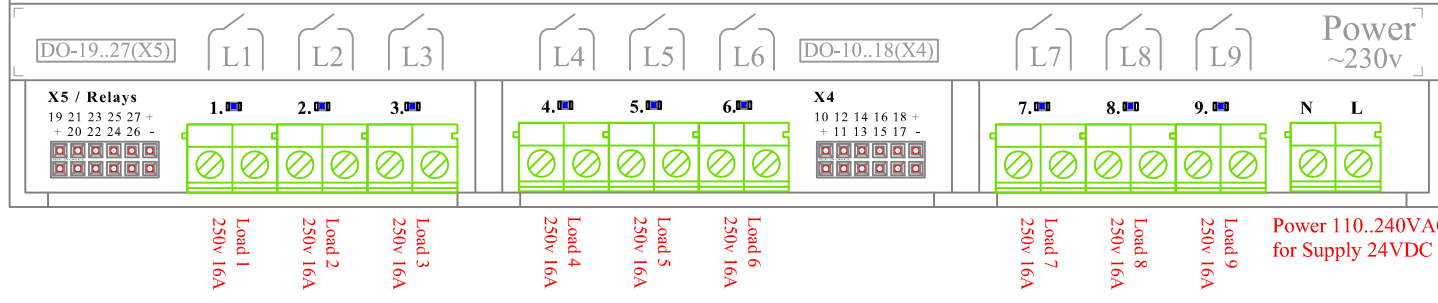
RJ45 Ethernet

Analogue and Digital Input group - ADI



Inputs Outputs Copability:
34xDO (9+2x9+6xAO+1):
 9x Power Bistable Relays 16A 250V for direct Power Switching
 2x 9x Open Collectors 0.2A 12..30V for Relays, LEDs, Servomotors,.... (in Connectors X4 and X5)
 6x PWM LSS (LowSideSwitch) 1.4A 32V (2xRGB LED Dimmers or 6xRelayDrive)
 1x DO LSS (LowSideSwitch) 1.4A for GSM modem power
16xDI: Embedded power 12V 250mA, DI LowLevel 0..2V, DI HiLevel 3..60V
16xADI: DI or AI SignalLevel 0..10V, 12bit
2xRS232: Embedded power 5v 200mA, **2xRS485:** Embedded power 5v 200mA
1xRJ45: 100Mb/s Ethernet

EasyHomePLC-5.2
 Designed for EasyHome Automation systems
 HomeLogicSoft™

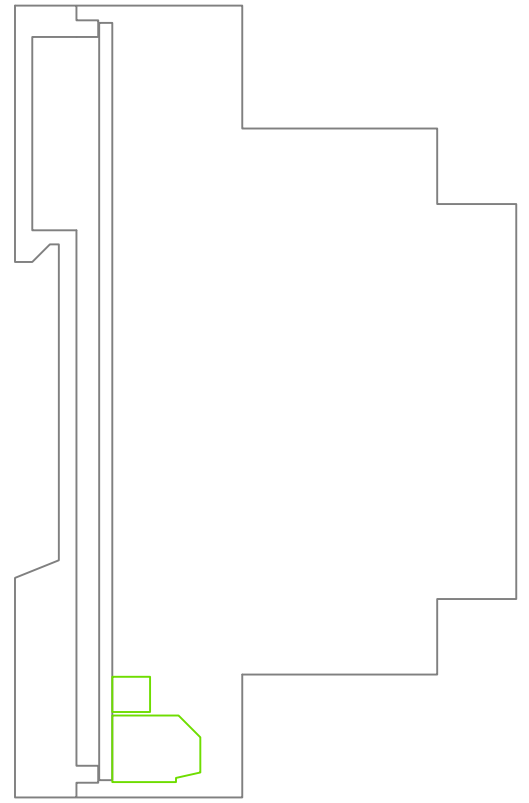
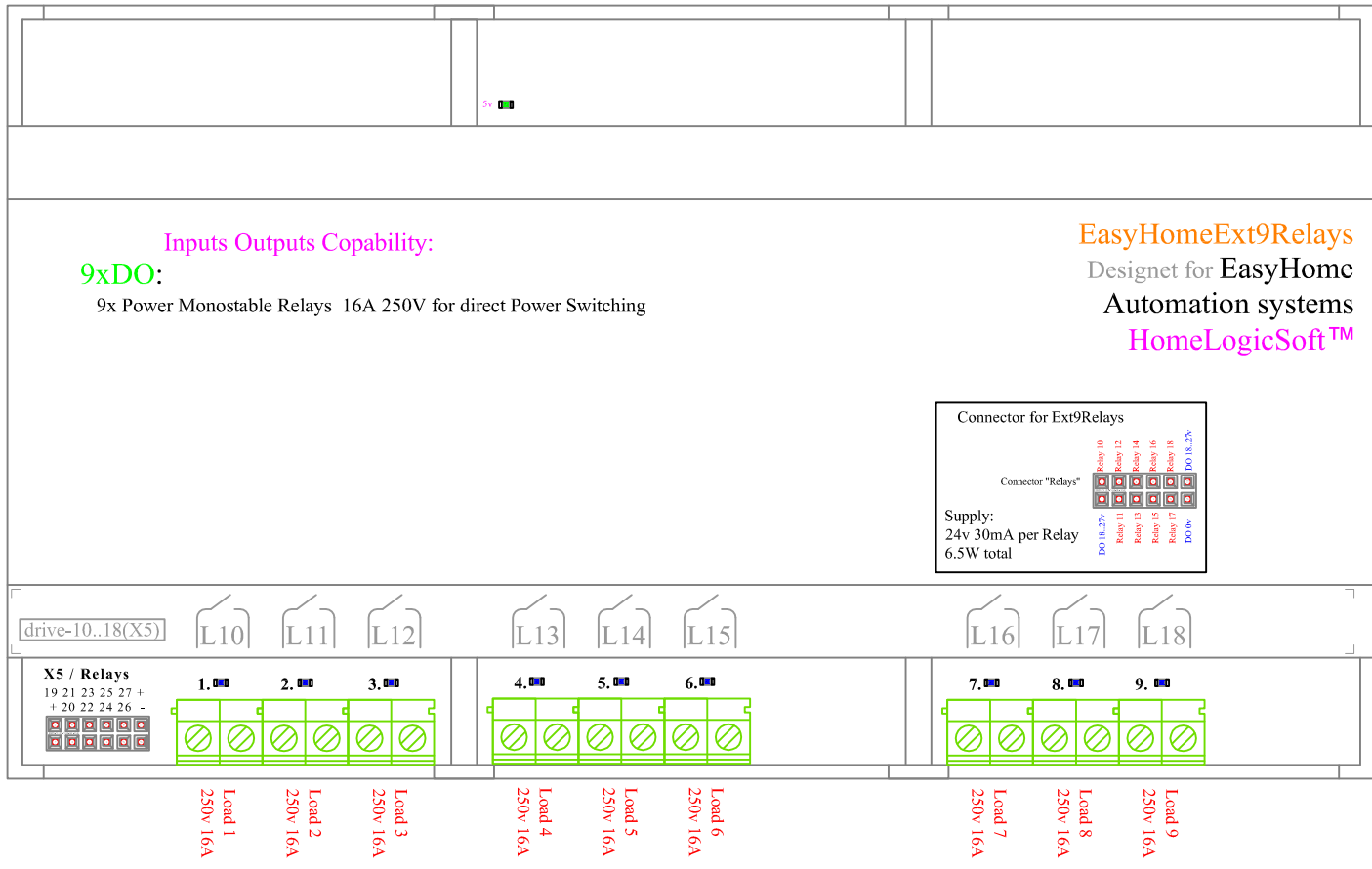


LEDs "12v" и "5v" shows power supply present.
 LED "LS" shows power supply present at LED-PWM dimmer.
 LED "IO" shows CPU work and amount Ethernet connections.
 LED "Mdm" show modem power present.
 LEDs "L1..L9" - shows relays state and switching

EasyHomePLC				
Санкт-Петербург				
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Разраб.	Забоев	22	07.06.22	
Проверил				
Утвердил				
ГИП				
EasyHomePLC-5.2			Страница	Лист
Pinout of device			РП	1
			Листов	7
			000"Новый Дом"	

Инв. N подл. Подпись и дата

Взам. инв. N



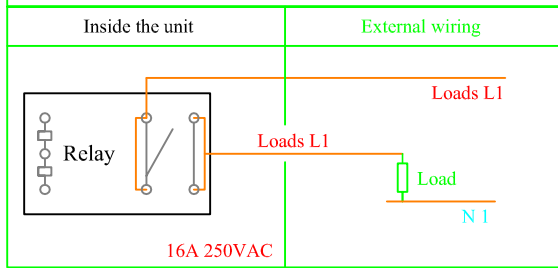
Embadded relays are driven by signal 24v 30mA from X5 connector by EasyHomePLC or any else controller.
 LED "5v" shows present power in X5 connector.
 LEDs "L10..L18" shows relays state.

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					Санкт-Петербург				
Изм.	Кол.	Лист	№ док.	Подпись	Дата	EasyHomePLC-5.2	Стация	Лист	Листов
Разраб.		Забоев		<i>[Signature]</i>	07.06.22		РП	2	7
Проверил						Pinout of Ext 9 relays block	ООО "Новый Дом"		
Утвердил									
ГИП									

Инв. N	подл.	Подпись и дата	Взам. инв. N

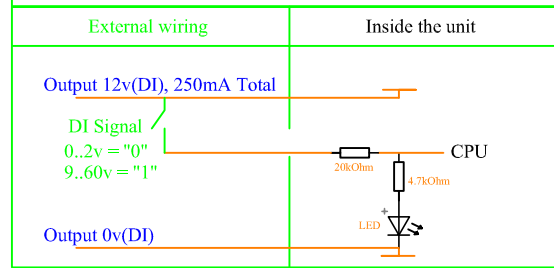
9x

Relay Output Schemes:

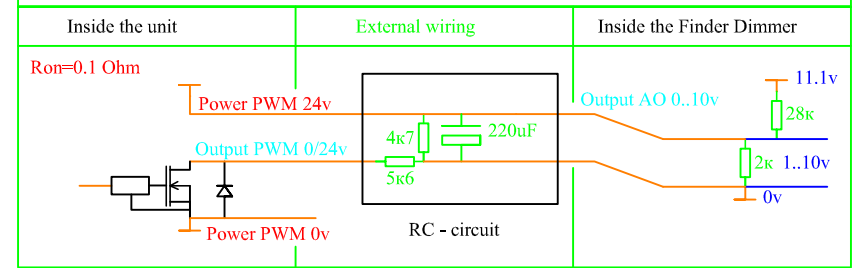


16x

Input DI Schemes:

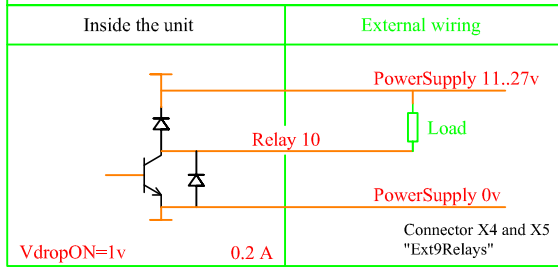


Dimmer 0-10v Finder



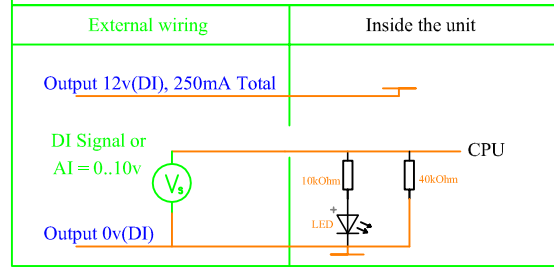
18x

Collector Output Schemes:

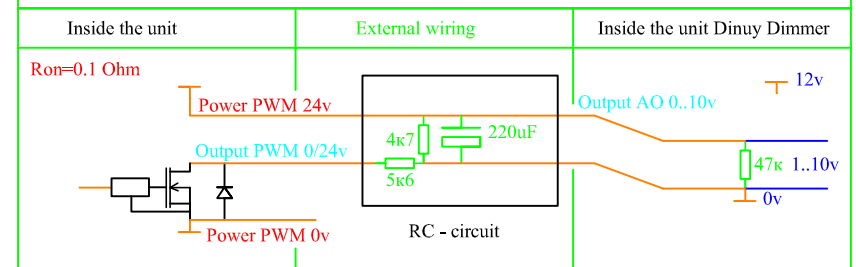


16x

Input ADI Schemes:

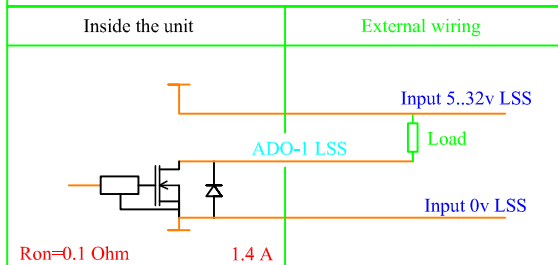


Dimmer 0-10v Dinuy



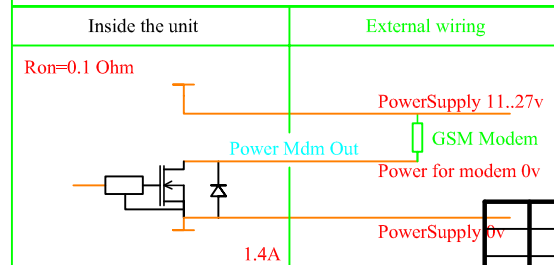
6x

LSS Output Schemes:



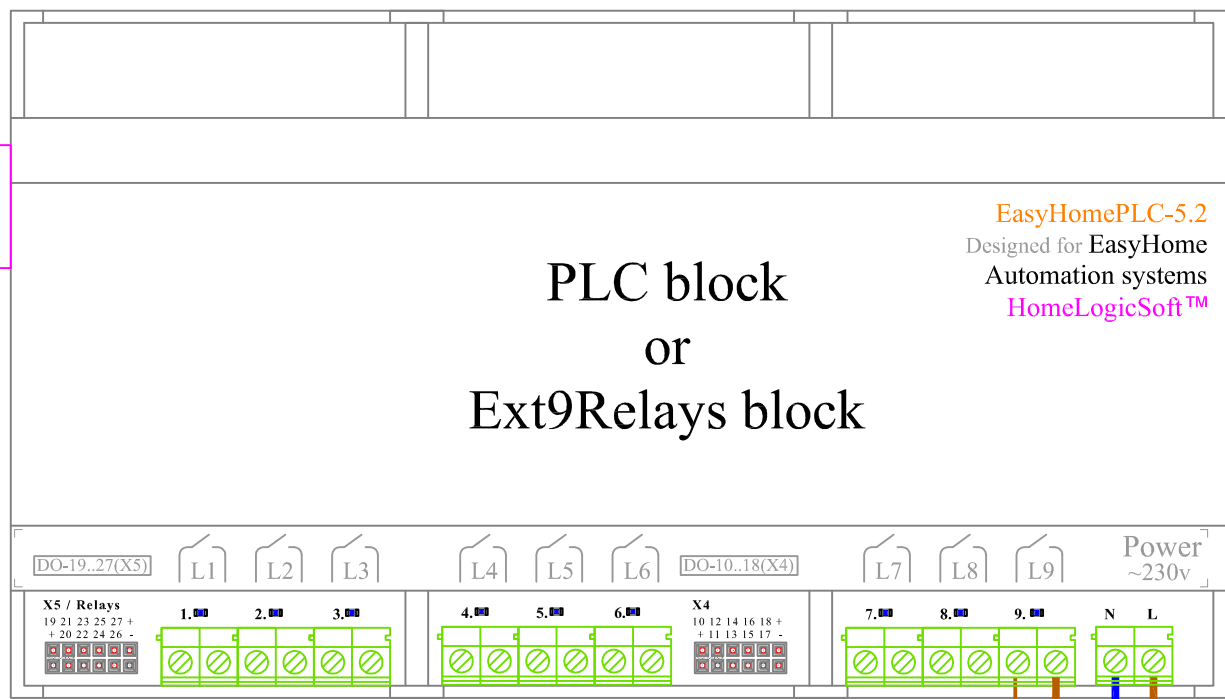
1x

Power out for modem:

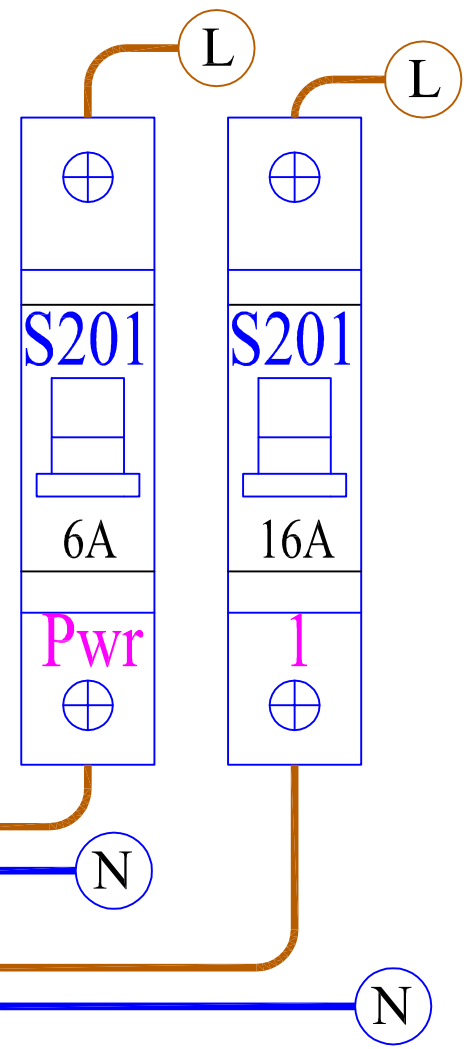


Инд. N подл. Подпись и дата Взам. инб. N

EasyHomePLC				
Санкт-Петербург				
Изм.	Кол.	Лист	№ док.	Подпись
Разраб.	Забоев			07.06.22
Проверил				
Утвердил				
ГИП				
EasyHomePLC-5.2			Страница	Лист
Inputs / OutPuts			РП	7
			000 "Новый Дом"	



Load 1 250V 16A
Load 2 250V 16A
Load 3 250V 16A
Load 4 250V 16A
Load 5 250V 16A
Load 6 250V 16A
Load 7 250V 16A
Load 8 250V 16A
Load 9 250V 16A



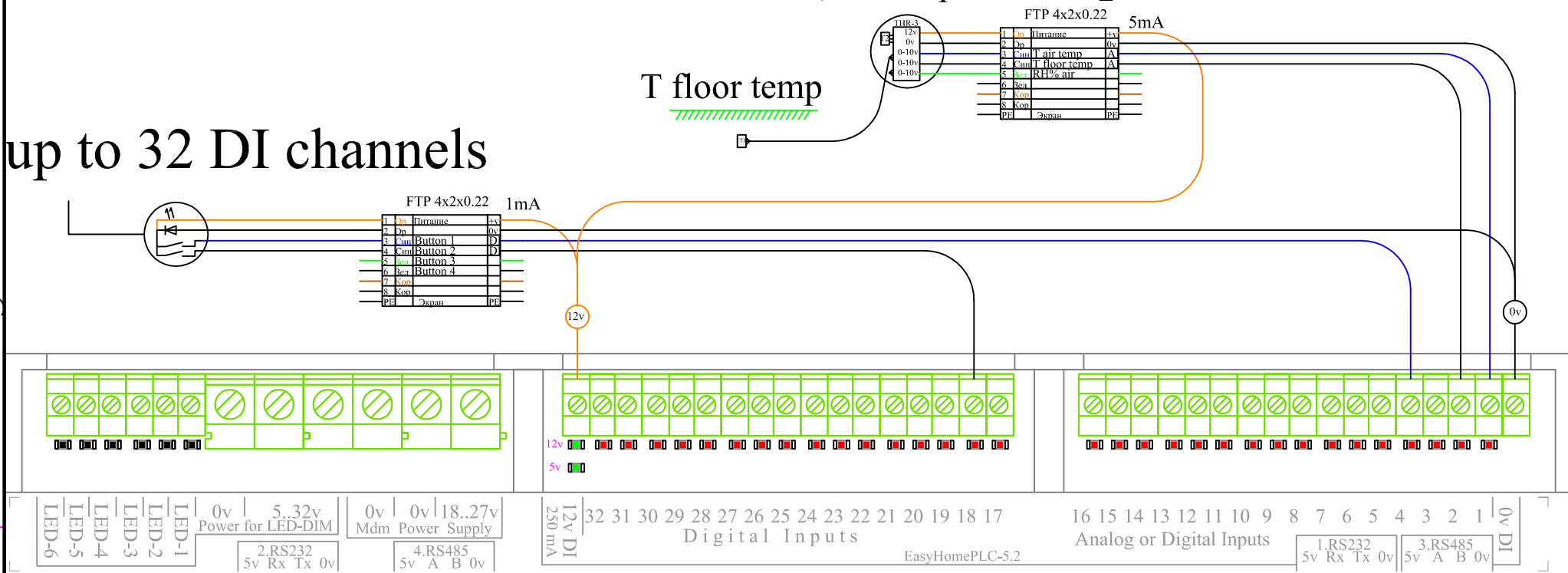
Light or any electrical loads

Инв. N подл.	Подпись и дата	Взам. инв. N
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EasyHomePLC					Санкт-Петербург			
Изм.	Кол.	Лист	№ док.	Подпись	Дата	Стация	Лист	Листов
Разраб.		Забоев			07.06.22	РП	4.1	7
Проверил						EasyHomePLC-5.2		
Утвердил						Typical connections		
ГИП						ООО "Новый Дом"		

up to 32 DI channels

up to 16 ADI channels



Inputs Outputs Copability:

34xDO (9+2x9+6xAO+1):

- 9x Power Bistable Relays 16A 250V for direct Power Switching
- 2x 9x Open Collectors 0.2A 12..30V for Relays, LEDs, Servomotors,... (in Connectors X4 and X5)
- 6x PWM LSS (LowSideSwitch) 1.4A 32V (2x RGB LED Dimmers or 6xRelayDrive)
- 1x DO LSS (LowSideSwitch) 1.4A for GSM modem power

16xDI: Embedded power 12V 250mA, DI LowLevel 0..2V, DI HiLevel 3..60V

16xADI: DI or AI SignalLevel 0..10V, 12bit

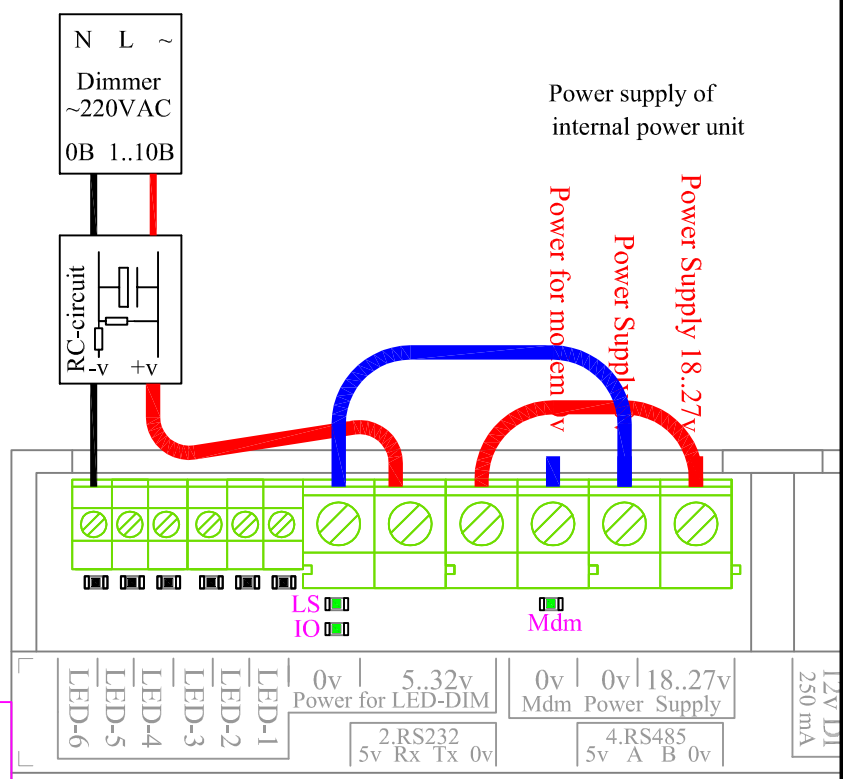
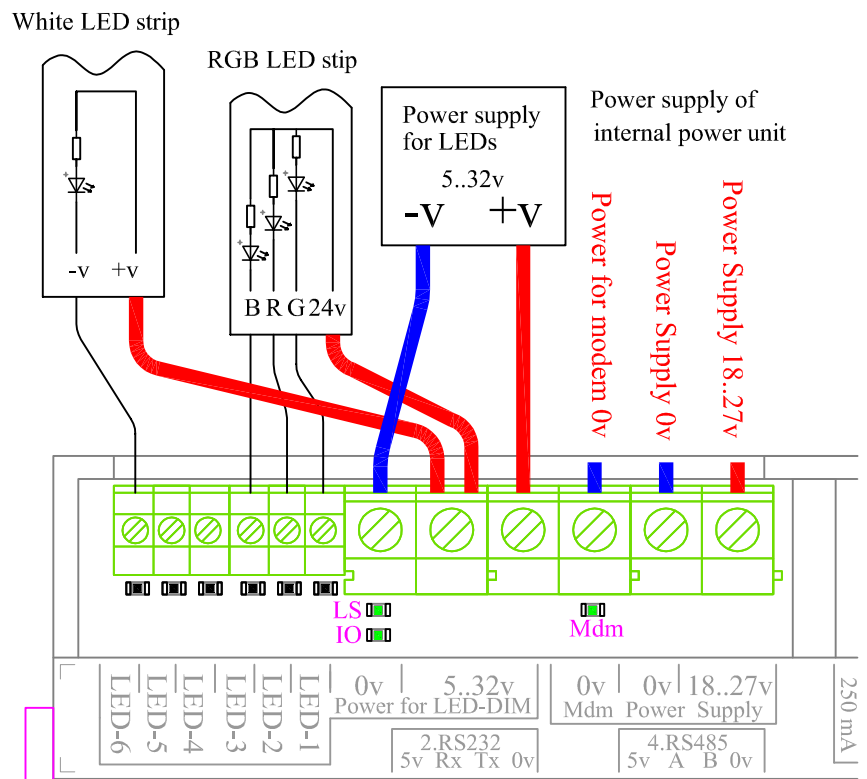
2xRS232: Embedded power 5v 200mA, **2xRS485:** Embedded power 5v 200mA

1xRJ45: 100Mb/s Ethernet

EasyHomePLC-5.2
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 Automation systems
 HomeLogicSoft™

EasyHomePLC				
Санкт-Петербург				
Изм.	Код	Лист	№ док	Подпись
Разраб.	Забоев	20	07.06.22	
Проверил				
Утвердил				
EasyHomePLC-5.2			Рисунки	Листы
Typical connections			РП	4.2
			Листов	7
			000"Новый Дом"	

6 channel LED-PWM dimmer 1,4 A.
with overload protection
(Use LED booster for more power for loads)



Inputs Outputs Copability:

34xDO (9+2x9+6xAO+1):

- 9x Power Bistable Relays 16A 250V for direct I
- 2x 9x Open Collectors 0.2A 12..30V for Relays,
- 6x PWM LSS (LowSideSwitch) 1.4A 32V (2x R
- 1x DO LSS (LowSideSwitch) 1.4A for GSM mo

16xDI: Embedded power 12V 250mA,

16xADI: DI or AI SignalLevel 0..10V, 12

2xRS232: Embedded power 5v 200mA

1xRJ45: 100Mb/s Ethernet

Inputs Outputs Copability:

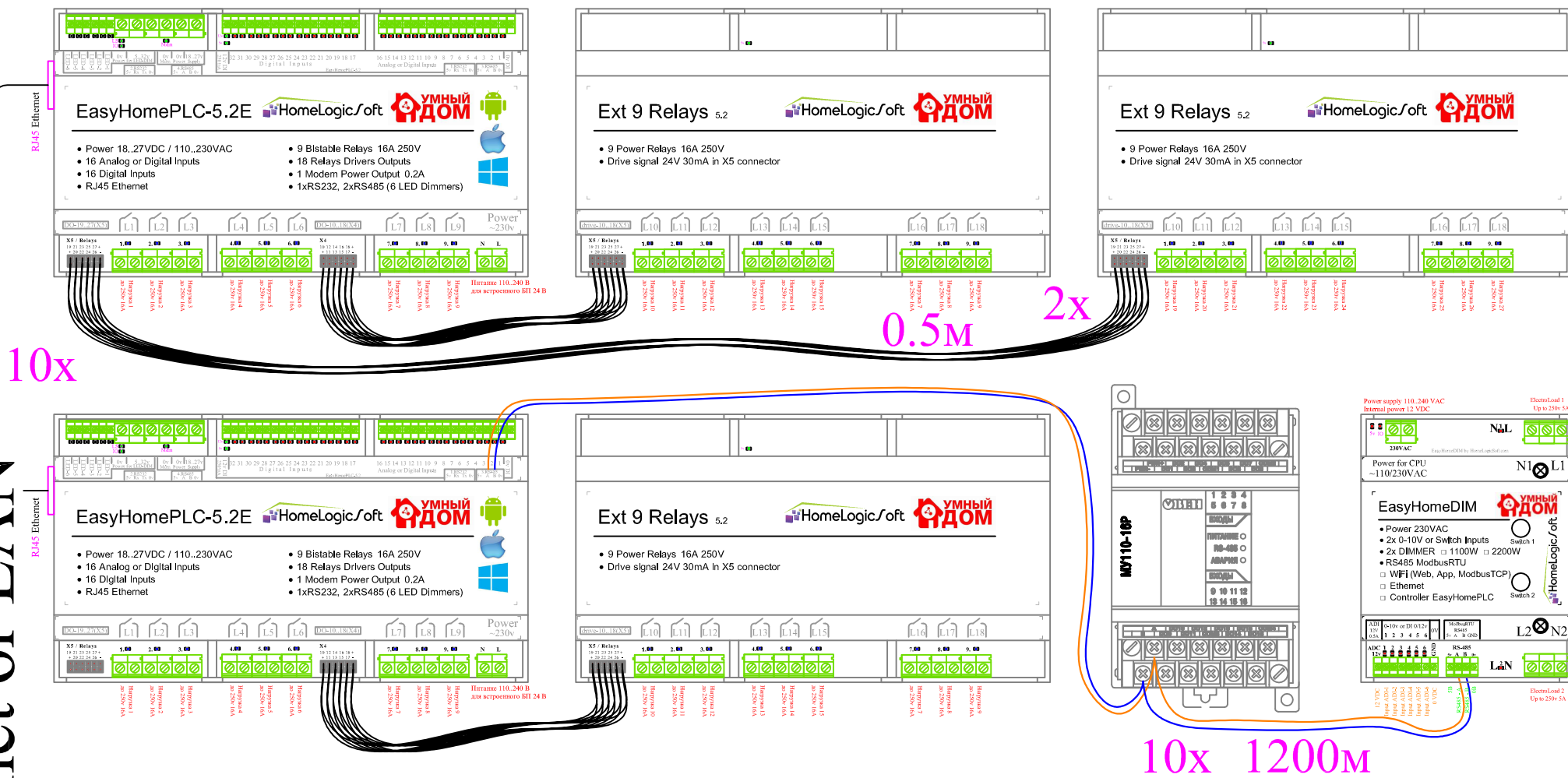
34xDO (9+2x9+6xAO+1):

- 9x Power Bistable Relays 16A 250V for direct Po
- 2x 9x Open Collectors 0.2A 12..30V for Relays, I

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				Санкт-Петербург		
Изм.	Код	Лист	№ док	Подпись	Дата	
Разраб.		Забоев			07.06.22	
Проверил						
Утвердил						
				EasyHomePLC-5.2		Страница
				Typical connections		Лист
						Листов
						РП 4.3 7
						000"Новый Дом"

Ethernet or LAN



Ways to expand Input-Output number for controller EasyHomePLC-5.2 :

- 1) Connect up to 2x blocks "Ext9relays" with 9x power relays 16A 250V for direct connections to the loads.
- 2) Connect up to 10x I/O modules OWEN Mx-110, EasyHomeDIM, RazumDom dimmers
- 3) Up to 10x controllers EasyHomePLC works as SINGLE CLUSTER in LAN area.

Wired systems:

- 4) Connect up to 60 MultiSensors WirenBoard or XY-MD

Wireless systems:

- 4) Connect up to 31x ZigBee S2C wireless I/O modules with 11 I/O channels per board
- 5) Connect up to 64x wireless transmitters and 64x receivers of radio 433MHz system noolLite

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				Санкт-Петербург		
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Разраб.		Забоев		<i>[Signature]</i>	07.06.22	Лист
Проверил						Листов
Утвердил						РП
				EasyHomePLC-5		
				System Expansion		
				000 "Новый Дом"		

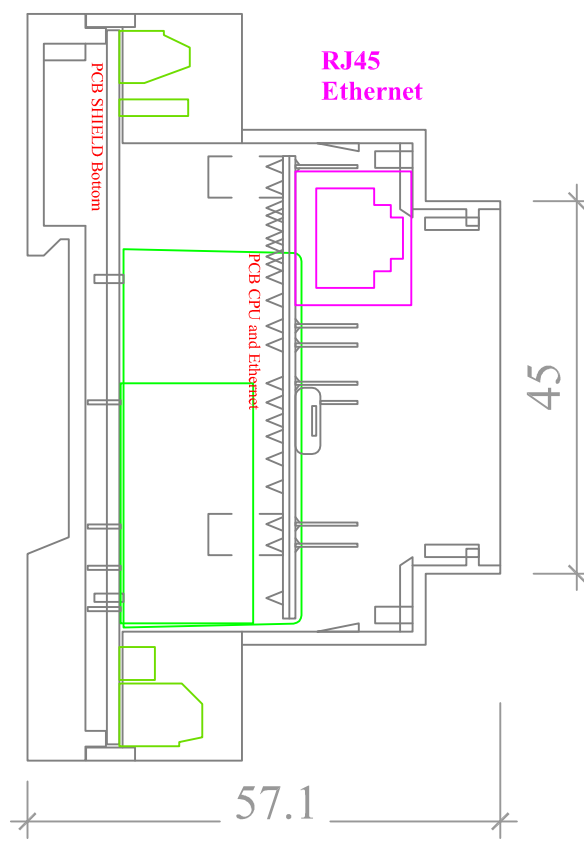
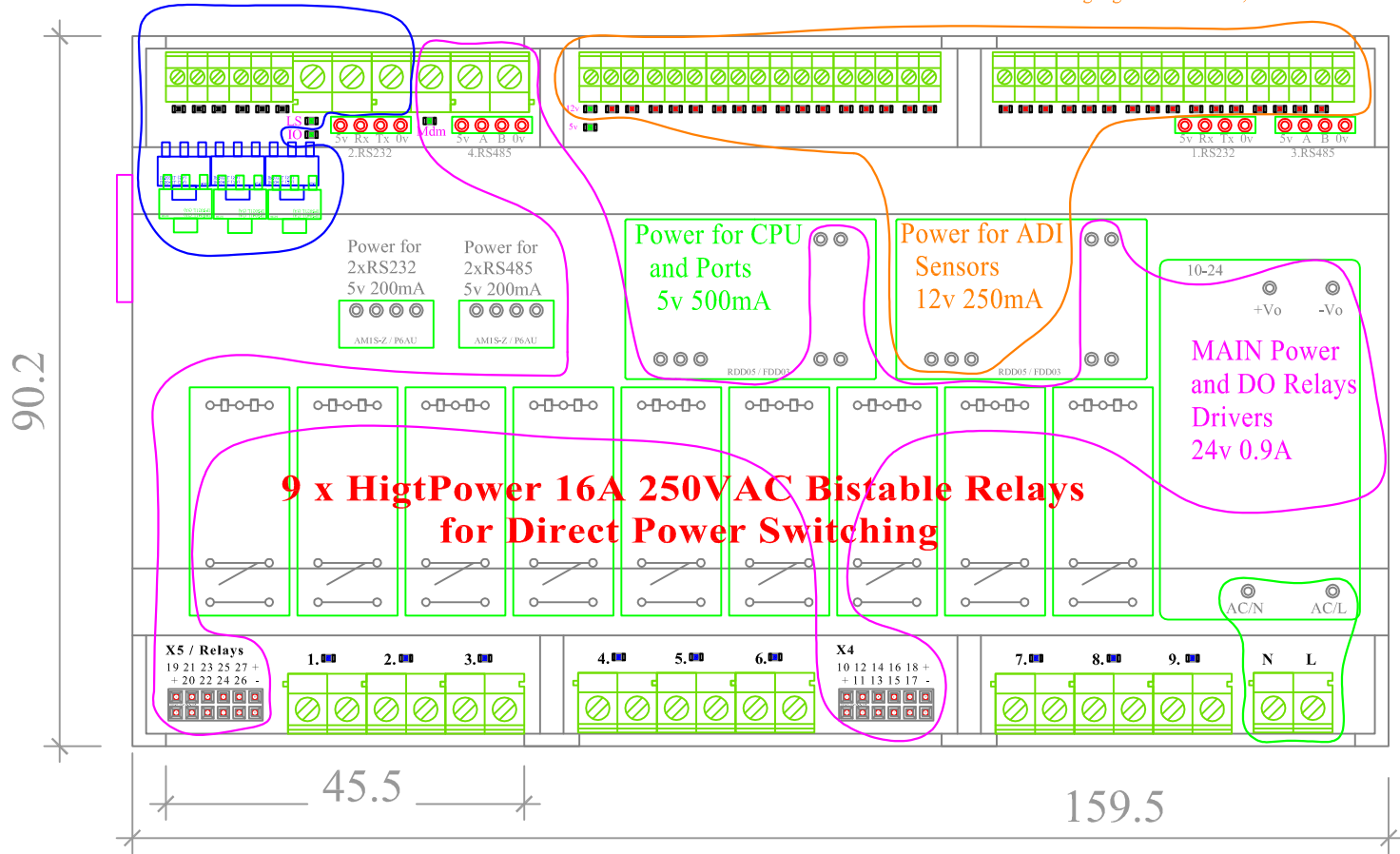
Инв. N	подг.	Подпись и дата	Взам. инв. N

Internal Systems of Device

6x DO+PWM (LowSideSwitch) 1.4A 32V
(2xRGB LED Dimmers or RelayDrive)

16x DI (Digital Inputs)
LowLevel 0..4V, HiLevel 8..60V

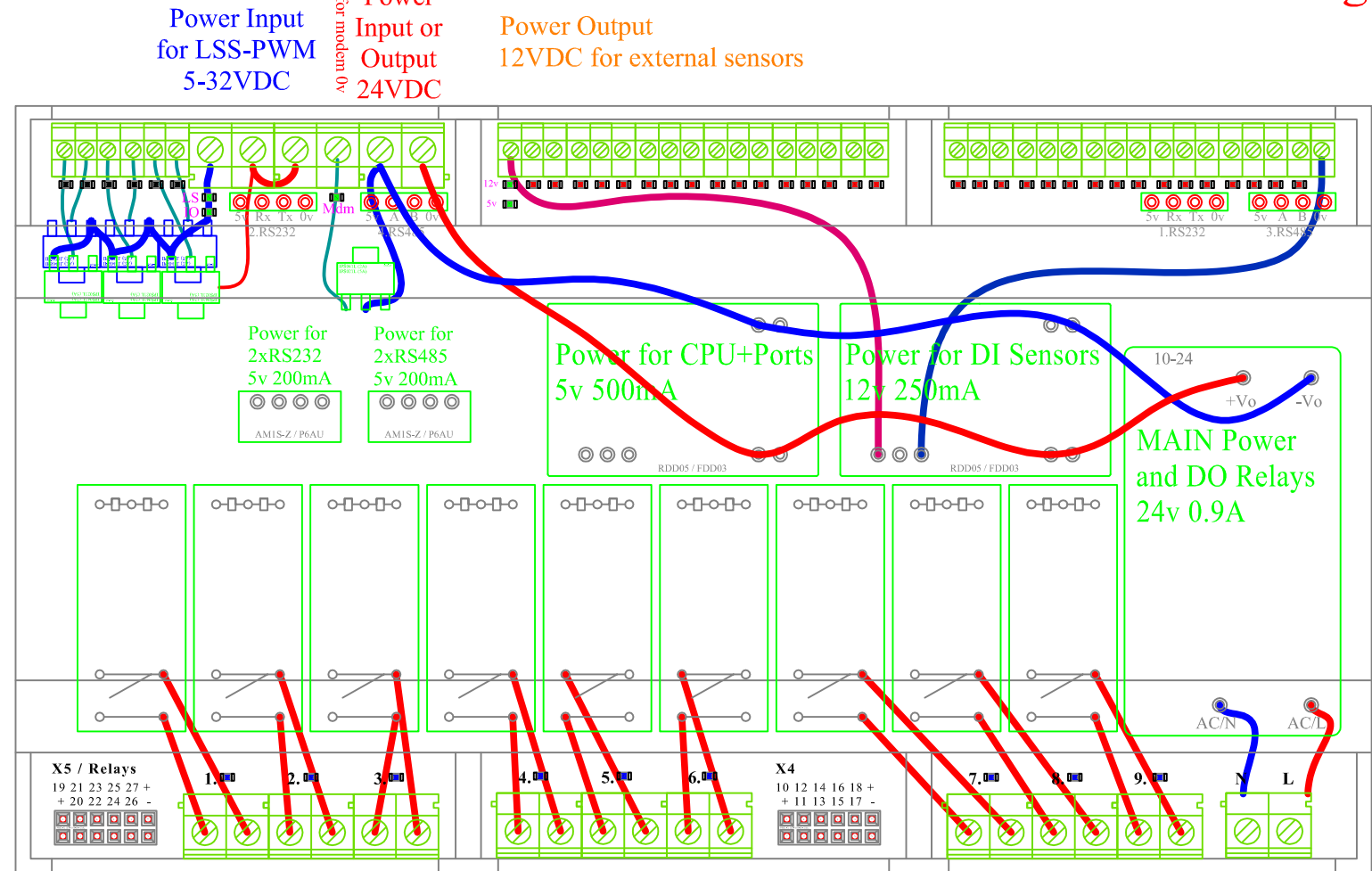
16x AI + DI (Analog Inputs)
Digital LowLevel 0..4V, HiLevel 8..60V
or Analog SignalLevel 0..10V, 12bit



Инв. N	подл.	Подпись и дата	Взам. инв. N
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				EasyHomePLC								
				Санкт-Петербург								
Изм.	Кол.	Лист	№ док.	Подпись	Дата	<table border="1"> <tr> <td>Стация</td> <td>Лист</td> <td>Листов</td> </tr> <tr> <td>РП</td> <td>6</td> <td>7</td> </tr> </table>	Стация	Лист	Листов	РП	6	7
Стация	Лист	Листов										
РП	6	7										
Разраб.		Забоев			07.06.22							
Проверил												
Утвердил												
ГИП				EasyHomePLC-5.2								
				Internal Systems		000"Новый Дом"						

Power circuit main internal wiring



Here are two main ways to connect the power to the device:

- a) **Use embedded power supply unit 24VDC 20W** : Connect AC voltage to **L** and **N**. Controller uses 3W energy only, extra energy uses for two external relay blocks - 6.5W per unit, or energy can be used to supply 12VDC for external sensors (up to 3W) or to supply LED-PWM Dimming section.
- b) **Use external power supply device 18..27VDC** : Connect DC voltage to **Power Supply 18..27v** and **Power Supply 0v**.
- c) If both ways are powered, then embedded unit will start if external voltage DC connected is lower 24VDC.

Power Input:
110..240VAC

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Изм.	Кол.	Лист	№ док.	Подпись	Дата	EasyHomePLC-5.2 Power Systems 000"Новый Дом"
Разраб.			Забоев	<i>[Signature]</i>	07.06.22	
Проверил						
Утвердил						
ГИП						Страница РП
						Лист 7
						Листов 7