

AgonLight2-HvIO

User Manual

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Introduction to AgonLight2-HvIO

[AgonLight2-HvIO](#) is Open Source Hardware board designed to work with AgonLight2.

It has these features:

- Four Solid-State-Relays SSR capable working on 240VAC with 1 A loads connected to AgonLight2 GPIO outputs
- SSR are with zero cross switching noise free
- Four opto isolated 240VAC inputs connected to AgonLight2 GPIO inputs
- Status LEDs for each output and input
- Status LEDs for 3.3V and 5V power supply of AginLight2
- Two Dallas DS18B20 temperature sensor inputs capable to work with [SNS-TMP-DS18B20](#)
- Dimensions 100x70 mm

Order codes for AgonLight2-HvIO:

[AgonLight2-HvIO](#)

AgonLight high voltage IO board

[SNS-TMP-DS18B20](#)

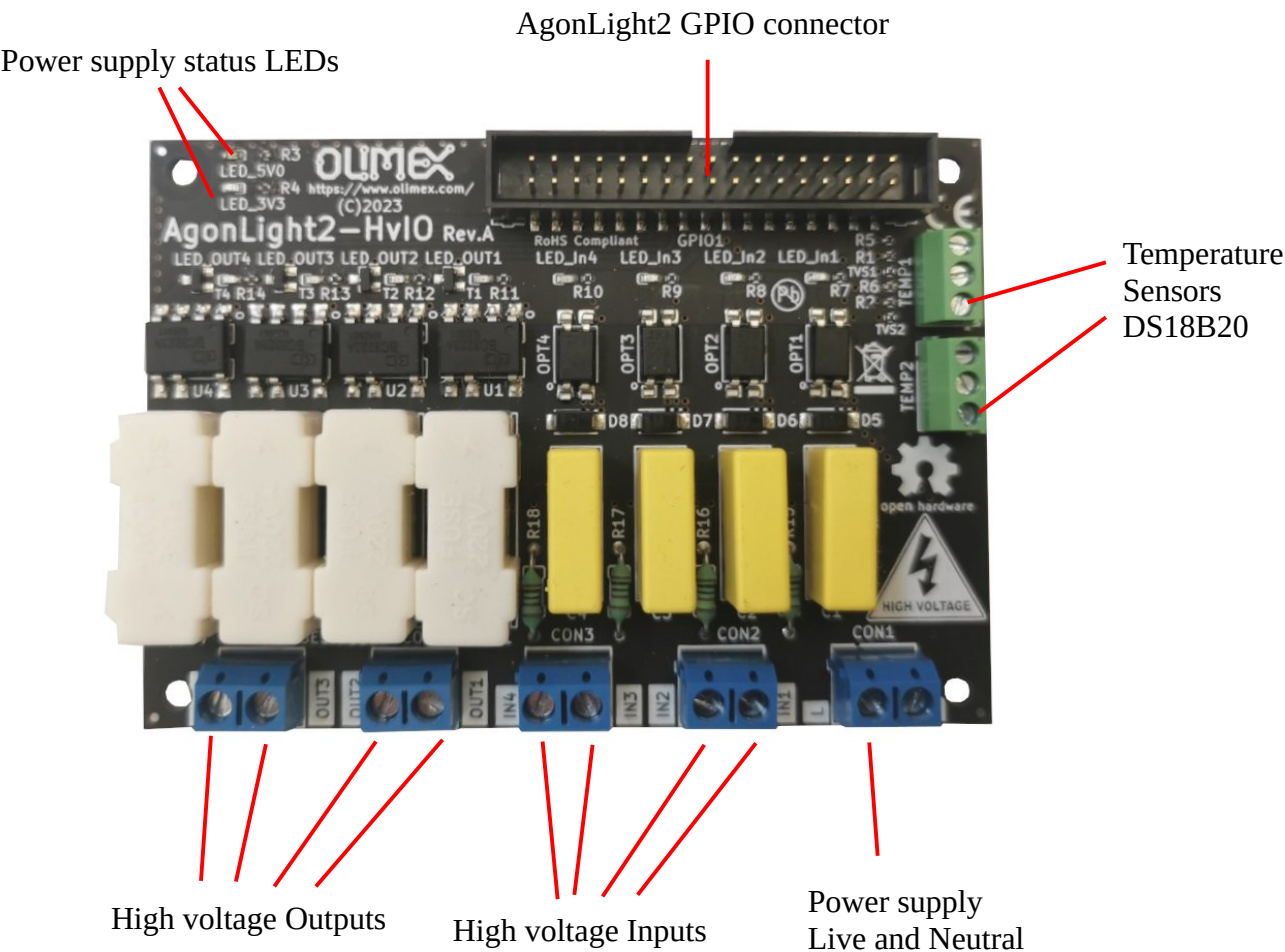
temparature sensor

CABLE-IDC34-15CM

not available yet cable between AgonLight2 and AgonLight2-HvIO

HARDWARE

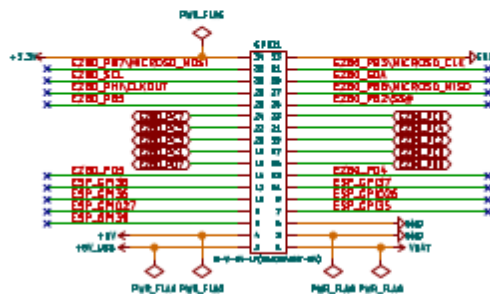
AgonLight2-HvIO layout:



AgonLight2-HvIO schematic

The schematic of [AgonLight2-HvIO](#) is on GitHub. On the next page there is picture of it.

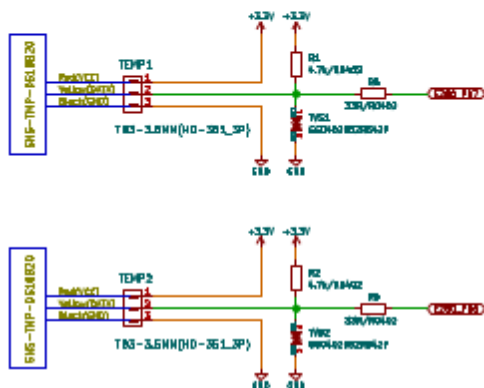
Interconnecting Connectors



Temperature Sensors

(1-wire)

<https://www.lifesciencevector.com/products/Salmonella-Typhimurium-SHS-TMP-0528620>



Power Leds



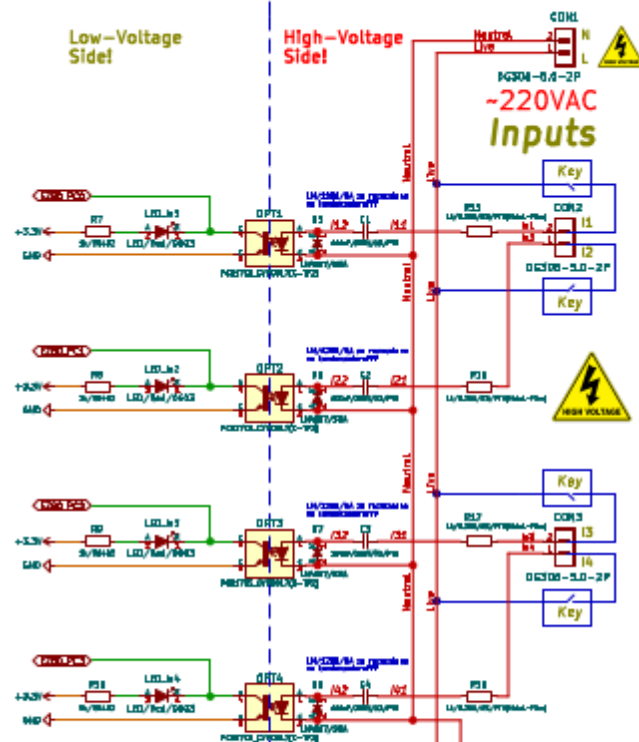
Fiduciaries



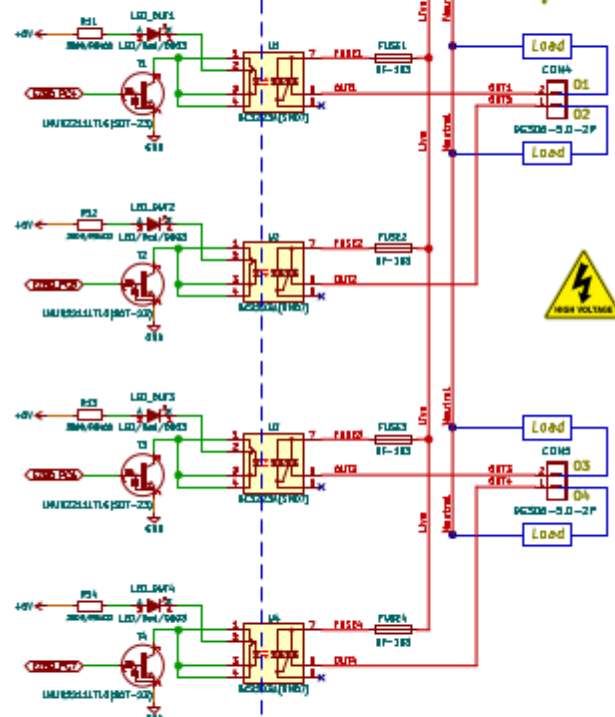
Mounting Holes



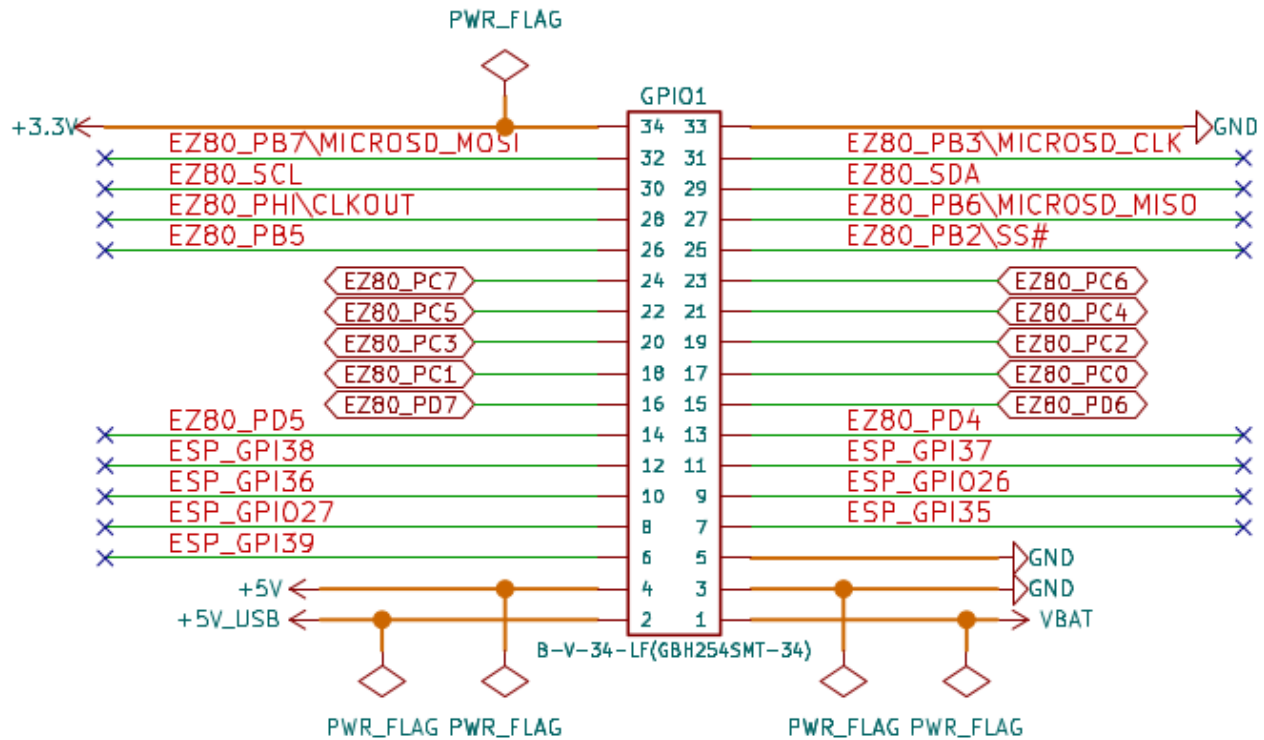
Main Power Source



Outputs



AgonLight2 GPIO connector:

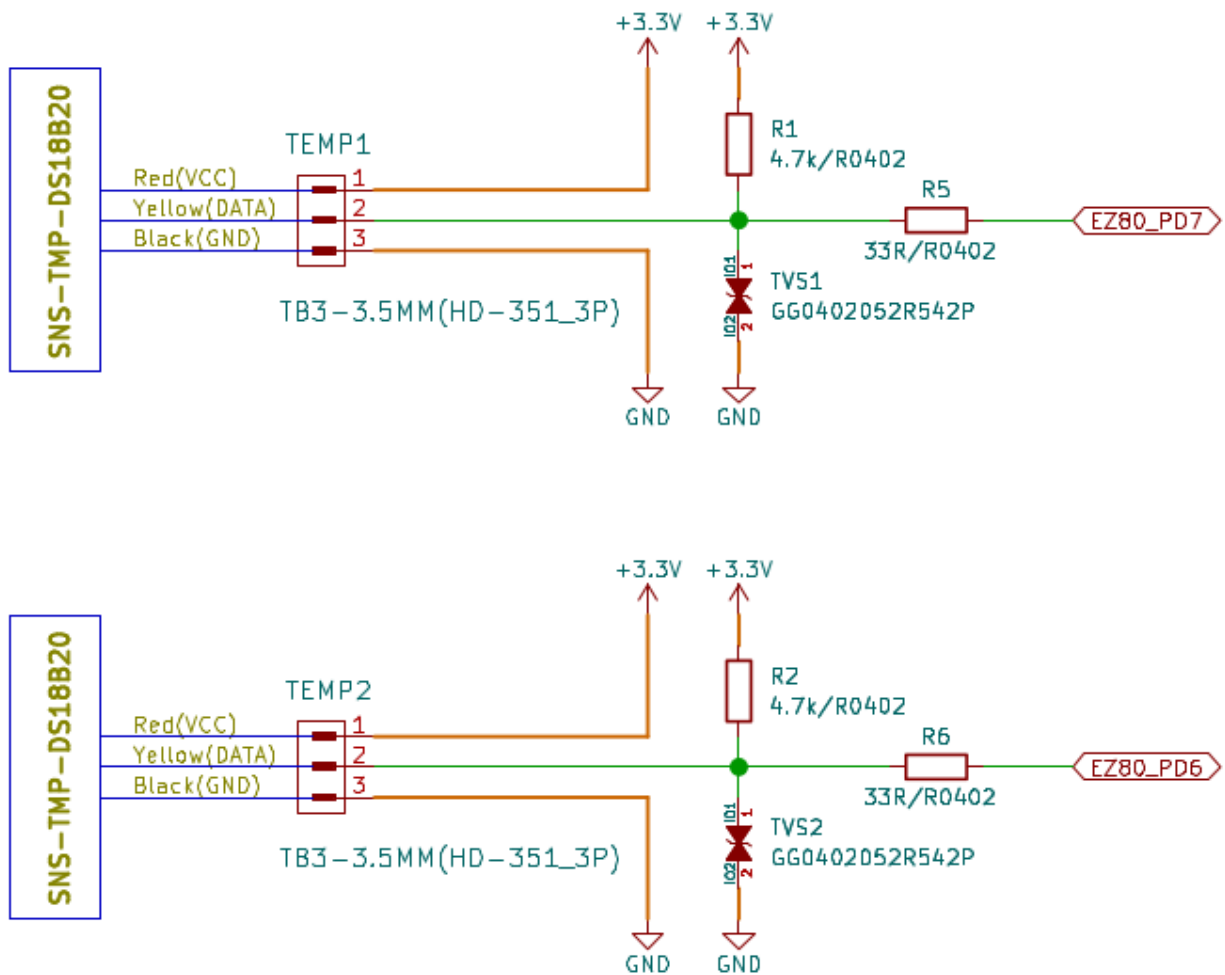


AgonLight2-HvIO temperature sensors connector:

Temperature Sensors

(1-wire)

<https://www.ollmex.com/Products/Components/Sensors/Temperature/SNS-TMP-DS18B20/>



SOFTWARE:

Reading the Inputs and Writing to the Outputs:

The outputs are assigned as follows:

OUT1 → PC4

OUT2 → PC5

OUT3 → PC6

OUT4 → PC7

The inputs are assigned as follows:

IN1 → PC0

IN2 → PC1

IN3 → PC2

IN4 → PC3

Port-C Data Direction Register is at address 159. To make port Input 1 should be written in the corresponding bit, to make it Output 0 should be written.

To make PC0-3 as inputs and PC4-7 as outputs the following basic command should be executed:

```
PUT 159 , %00001111
```

Port-C Data Value register is at address 158, so to read the Port-C status you can use:

```
PRINT GET(158)
```

and to set OUT1 = HIGH

```
PUT 158, %00010000
```

to set OUT1 = LOW

```
PUT 158, %00000000
```

Here is sample test program:

```
10 PC_DR% = &9E
20 PC_DDR% = &9F
30 PC_ALT1% = &A0
40 PC_ALT2% = &A1
50 PD_DR% = &A2
60 PD_DDR% = &A3
70 PD_ALT1% = &A4
80 PD_ALT2% = &A5
90 PUT PC_DDR%, &F
100 PUT PC_ALT1%, &00
110 PUT PC_ALT2%, &00
120 PUT PD_DDR%, &FF
130 I=0
140 Input=0
150 PCD = GET(PC_DR%)
160 Input = Input OR ((PCD EOR &F) AND &F)
170 PRINT "PCD="; PCD; " Input=";Input; " I="; I
180 I=I+1
190 IF (I<10) THEN GOTO 150
200 PUT PC_DR%, Input*16
210 Temp = GET(PD_DR%) AND &C0
220 IF (Temp = &C0) THEN GOTO 130
230 PUT PC_DR%, (GET(PC_DR%) AND &3F) OR ((GET(PD_DR%) AND &C0)EOR &C0)
240 PCD = GET(PC_DR%) AND &F
250 IF (PCD=15) THEN GOTO 230 ELSE GOTO 130
```

Revision History

Revision 1.0 October 2023 initial