

Eingabeeinheit – Außen

The diagram illustrates the external input unit circuit, which includes the following components and connections:

- Arduino Nano v3.x:** The central microcontroller with pins labeled D0/RX, D1/TX, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, A0, A1, A2, A3, A4, A5, A6, A7, GND, and RESET.
- DS18B20 (U1):** A 1-wire digital temperature sensor connected to DQ (pin 2), GND VDD (pin 1), and GND.
- Keypad (J1):** An 8x4 keypad connected to D0/RX, D1/TX, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, and GND.
- Power Regulation:** A 7.5V source is connected to VIN (pin 30). A 5V regulator (U2) is connected to +5V (pin 5), GND (pin 1), and +7.5V (pin 2).
- Relay (Q2):** A BC547 transistor relay connected to A0 (pin 19), A1 (pin 20), A2 (pin 21), A3 (pin 22), A4 (pin 23), A5 (pin 24), A6 (pin 25), A7 (pin 26), and GND.
- LEDs:** Three LEDs (D1, D2, D3) are connected to A0 (pin 19), A1 (pin 20), and A2 (pin 21) through resistors R2 (100Ω), R3 (100Ω), and R4 (150Ω) respectively. The LEDs are labeled Rot (Red), Gelb (Yellow), and Grün (Green).
- Other Components:** Resistors R1 (4k7), R8 (GL5539, 50k-100kΩ), R9 (100k), R10 (1k5), and R11 (56) are used for various signal conditioning and power management.

Server – Innen

SCK (Serial Clock) D13
 SS (Slave Select) D8 (D10 über SW Einstellung)
 MOSI (Master Out Slave In) D11
 MISO (Master In Slave Out) D12

Pin wie am Arduino

Ethernet Shield J4

+5V
 GND

+12V
 GND PWR Con Versorgung

+7.5V
 GND PWR Con Keypad

+12V
 +7.5V

Verpolungsschutz
 D10 Rot
 R13 680
 C1 470µ
 U3 YAAJ_DCDC_StepDown_LM2596
 Vin
 Vout
 GND
 GND
 C3 10µ
 C4 10µ

+7.5V
 +3.3V
 +5V

TX1
 RX1
 D2
 D3
 D4
 D5
 D6
 D7
 D8
 D9
 D10
 MOSI
 MISO
 SCK
 A0
 A1
 A2
 A3
 SDA/A4
 SCL/A5
 A6
 A7

RESET
 RESET

AREF

Arduino_Nano_Every

+5V
 R5 4k7
 U2 DS18B20
 GND VDD
 DQ
 GND

J3 Serial Server

+12V
 D5 1N4001
 K1 SHC SRE 303012
 Q1 BC547
 R7 1k5
 R6 150
 D4 Grün
 GND

J10 reSync
 J11 Reset IP
 J9 Clear EEPROM & 6 offen

12V:
 J5 Brücken:
 1 – 2 12V;
 3 – 4 12V geschaltet;
 5 – 6 GND;
 D11:
 1 N 4001
 Potentialfrei:
 J5 Brücken:
 Clear EEPROM & 6 offen;
 2 – 3;
 4 – 5;
 D11:
 offen

+12V
 C2 470µ
 GND

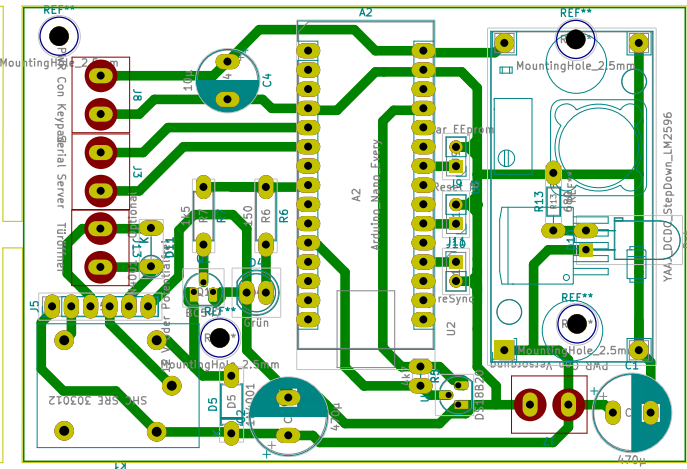
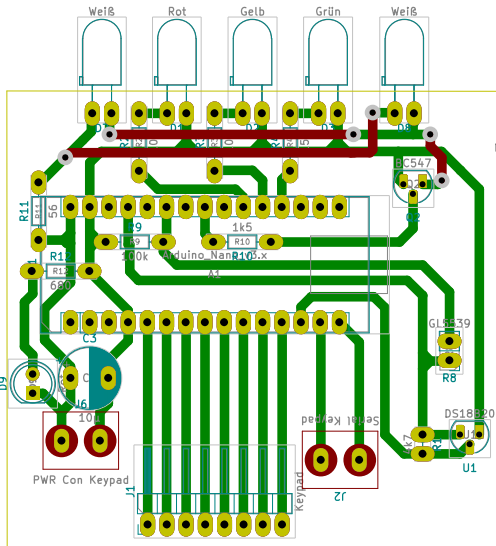
12 V oder Potentialfrei
 J5
 D11 1N4001 – Optional
 J13 Türöffner

Erweiterung Power LED
 Einstellbarer Relaisausgang
Autor: DG1ATN (Dr. T. Nowack)
 Sheet: /
 File: Zahlenschloss.kicad_sch

Title: Zahlenschloss für Türen

Size: A4 Date: 2024-02-12
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 Id: 1/1



Einstellmöglichkeit Relaisausgang

Erweiterung Power LED

Autor: DG1ATN (Dr. T. Nowack)

Sheet:

File: Zahlschloss.kicad_pcb

Title: Zahlschloss für Türen

Size: A5

Date: 2024-02-12

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