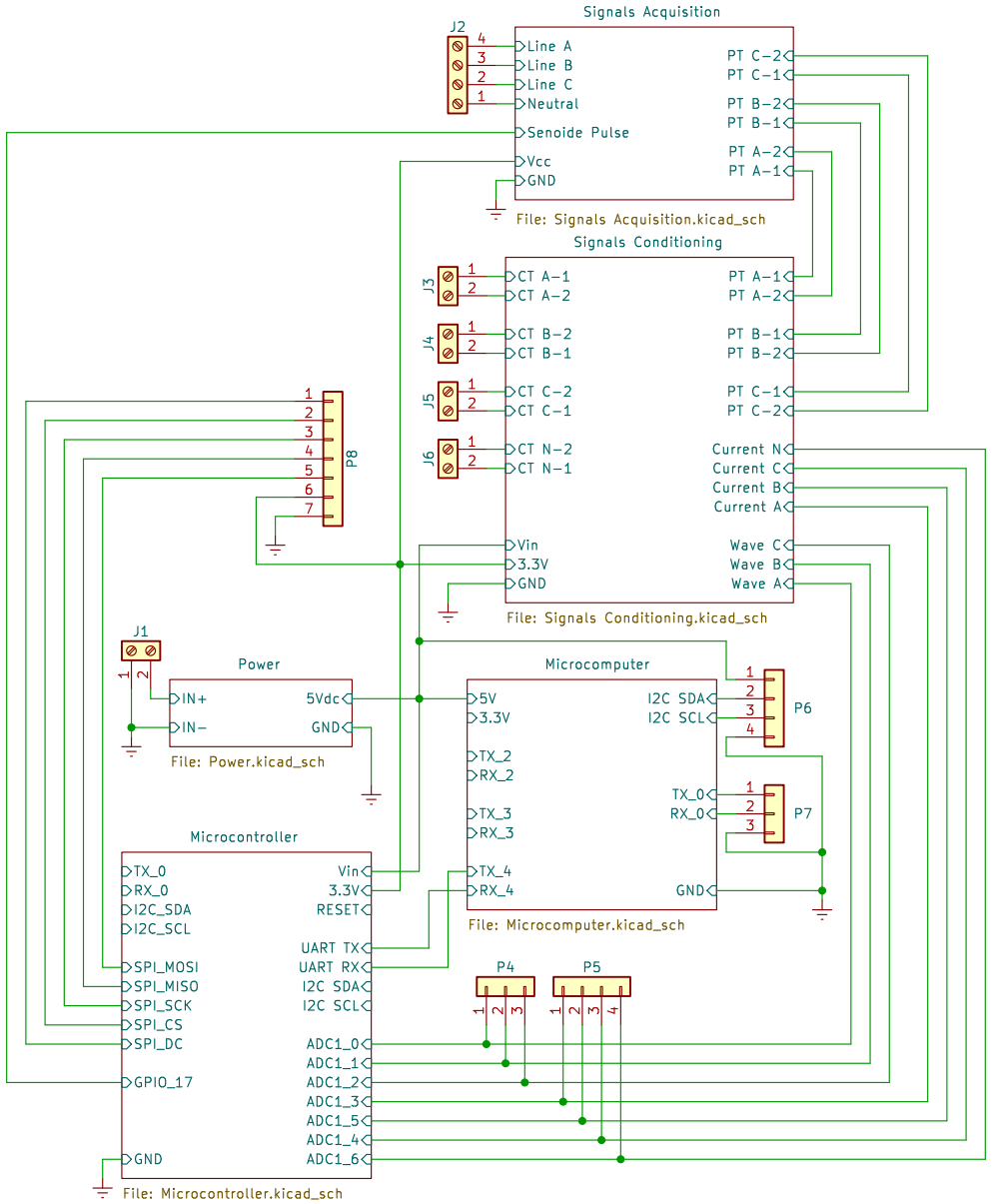


Specifications

Rating	Value	Unit
Minimum Input Voltage	30	Vdc
Maximum Input Voltage	7	
Nominal Current	3	A
Short circuit current	5	
Operating Temperature Range	0 to +60	°C

Type of Electrical System

Electrical System	Type
Monophasic (P+N)	0
Biphasic (2P)	0
Biphasic (2P+N)	1
Triphasic (3P+N)	2

Observation

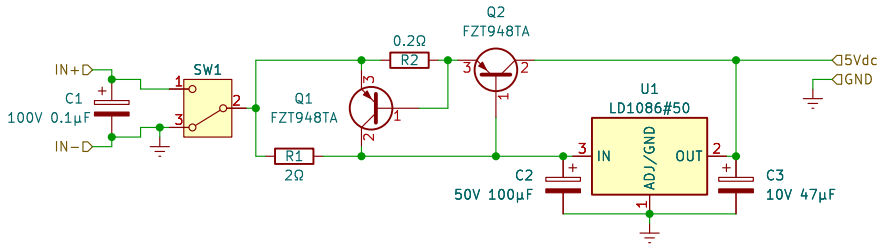
After selecting the ideal resistor for your application, according to the table, remember to modify the value of the variable "SYSTEM_TYPE" in the Microcomputer code according to what's in the table

github.com/lucasrguerra/power_vision
linkedin.com/in/lucasrguerra
Lucas Rayan Guerra da Silva

Sheet: /
File: board.kicad_sch

Title: Power Vision V5.0 Schematic

Size: A4	Date: 31/08/2024	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.10		Id: 1/6



Specifications

Rating	Value	Unit
Maximum Input Voltage	30	Vdc
Minimum Input Voltage	14	
Output Voltage	5	
Nominal Current	4	A
Short circuit current	6	
Operating Temperature Range	-55 to +125	°C
FZT948TA Operation Temperature	-55 to +150	
LD1086 Operation Temperature	-65 to +150	
Capacitor Operation Temperature	-55 to +125	

github.com/lucasrguerra/power_vision
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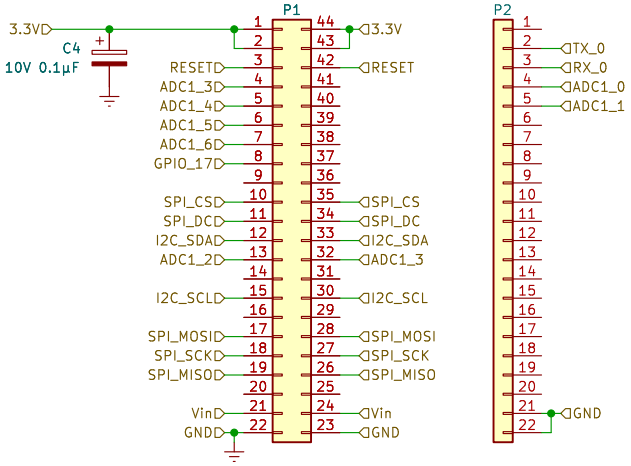
Lucas Rayan Guerra da Silva

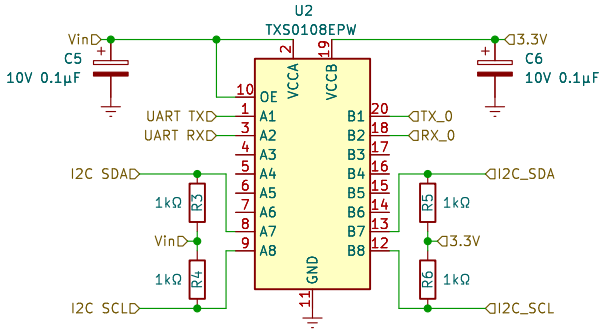
Sheet: /Power/
File: Power.kicad_sch

Title: Power

Size: A4	Date: 2024-09-27	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.10		Id: 2/6

ESP32-S3 N16R8





Specifications

Rating	Value	Unit
Input Voltage - Vin	5	Vdc
Nominal Current	0.5	A
Operating Temperature Range	-40 to +65	°C
ESP32-S3 Operation Temperature	-40 to +65	
TXS0108E Operation Temperature	-40 to +85	
Capacitor Operation Temperature	-55 to +125	

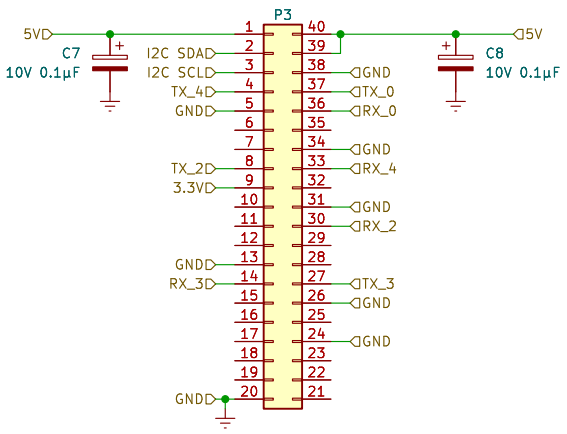
github.com/lucasrguerra/power_vision
linkedin.com/in/lucasrguerra
Power Vision

Sheet: /Microcontroller/
File: Microcontroller.kicad_sch

Title: Microcontroller

Size: A4	Date: 27/09/2024	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.10		Id: 3/6

Orange Pi Zero 2W



Specifications

Rating	Value	Unit
Input Voltage - Vin	5	Vdc
Nominal Current Range	2 to 3	A
Operating Temperature Range	0 to +70	°C
Orange Pi Zero 2W Operation Temperature	0 to +70	
Capacitor Operation Temperature	-55 to +125	

github.com/lucasrguerra/power_vision
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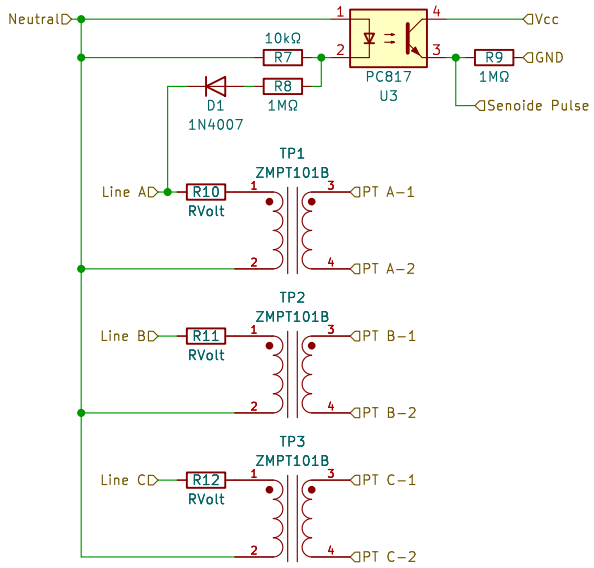
Lucas Rayan Guerra da Silva

Sheet: /Microcomputer/
File: Microcomputer.kicad_sch

Title: Microcomputer

Size: A4	Date: 2024-09-27	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.10		Id: 4/6



Specifications

Rating	Value	Unit
Input Voltage Range	0 to 1000	Vac
ZMPT101B Nominal Current Range	1 to 2	mA
Operating Temperature Range	0 to +70	°C
ZMPT101B Operation Temperature	-40 to +60	
PC817 Operation Temperature	-30 to +100	

Resistor to Voltage

System Voltage (RMS)	Rvolt	Type
440Vac	510kΩ	0
380Vac	470kΩ	1
220Vac	300kΩ	2
127Vac	180kΩ	3

Observation

After selecting the ideal resistor for your application, according to the table, remember to modify the value of the variable "VOLTAGE_TYPE" in the Microcomputer according to what's in the table

github.com/lucasrguerra/power_vision
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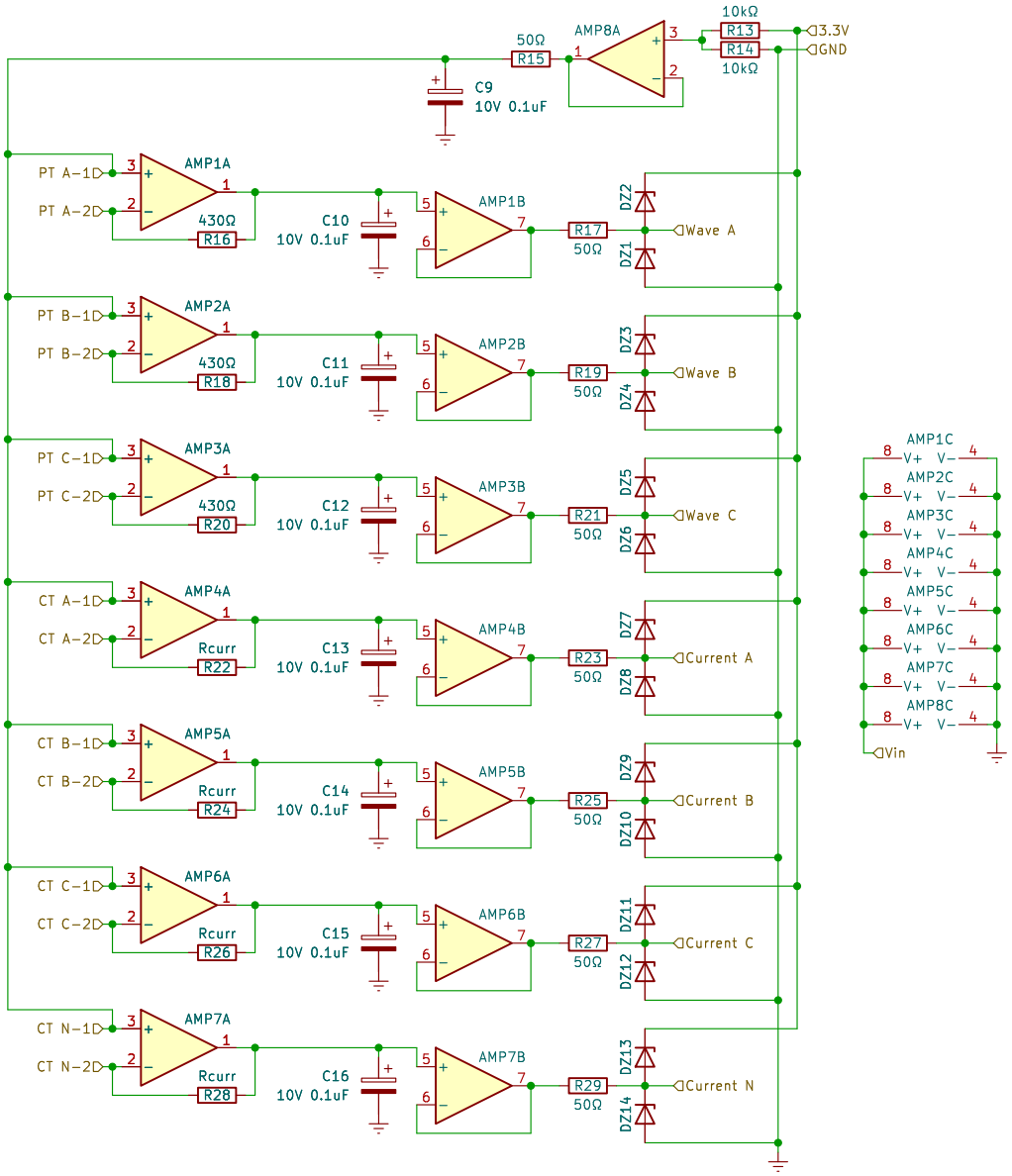
Lucas Rayan Guerra da Silva

Sheet: /Signals Acquisition/
File: Signals Acquisition.kicad_sch

Title: Signals Acquisition

Size: A4	Date: 2024-09-27	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.10		Id: 5/6



Specifications

Rating	Value	Unit
Maximum Input Voltage	30	Vdc
Minimum Input Voltage	5	
Nominal Current	4	A
Short circuit current	6	
Operating Temperature Range	0 to +70	°C
TL082 Operation Temperature	0 to +70	
Capacitor Operation Temperature	-55 to +125	

Resistor to Current

Nominal Current	Rcurr	Ratio	Type
1000A	2Ω	3000:1	0
750A	2.7Ω	3000:1	1
500A	4.3Ω	3000:1	2
300A	6.8Ω	3000:1	3
200A	10Ω	3000:1	4
120A	18Ω	3000:1	5
100A	12Ω	2000:1	6
80A	27Ω	3000:1	7
20A	68Ω	2000:1	8

Observation

After selecting the ideal resistor for your application, according to the tables, remember to modify the value of the variable "CURRENT_TYPE" in the Microcomputer code according to what's in the table

github.com/lucasrguerra/power_vision
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Lucas Rayan Guerra da Silva

Sheet: /Signals Conditioning/
File: Signals Conditioning.kicad_sch

Title: Signals Conditioning

Size: A4	Date: 2024-09-27	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.10		Id: 6/6