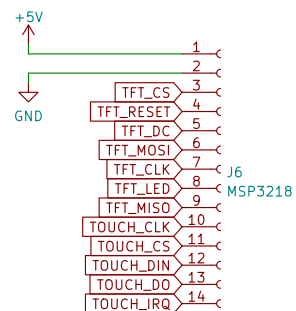
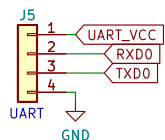
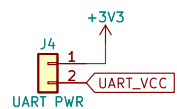
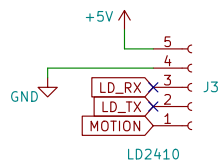
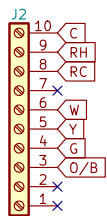
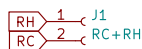
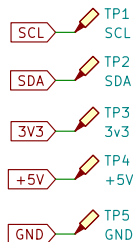


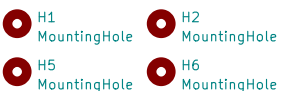
Connectors



Test Points



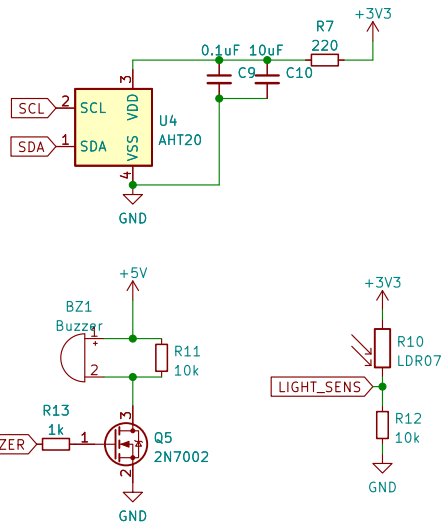
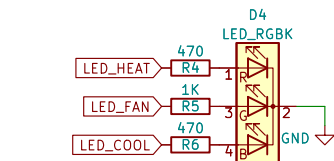
TFT Mounting Holes



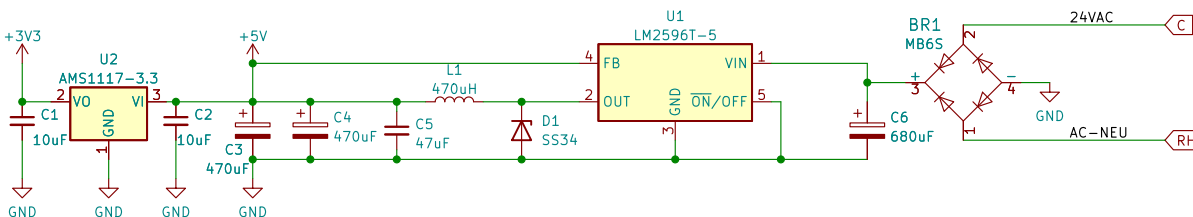
PCB Mounting Holes



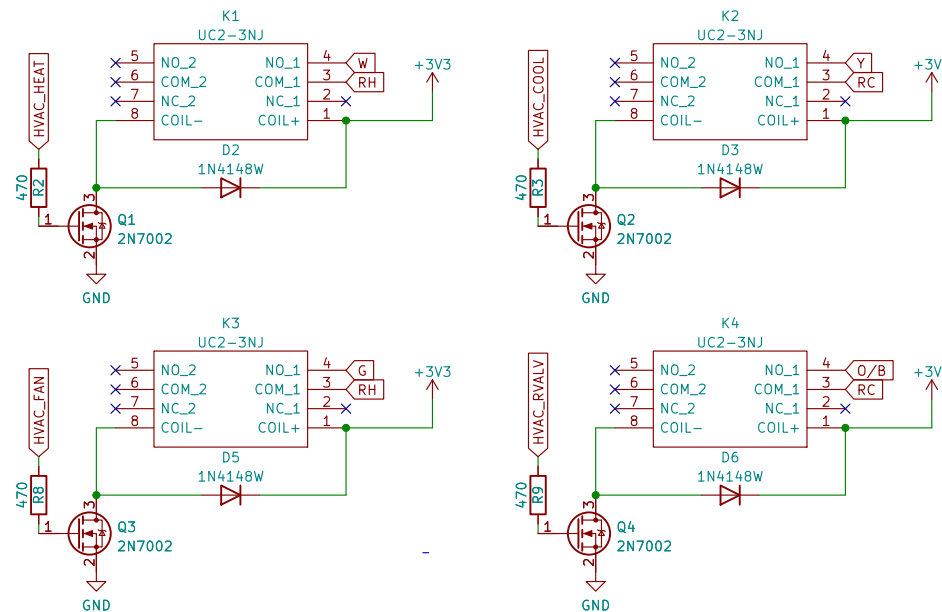
Sensors & Indicators



Power Supply



HVAC Relays



(C) 2023 Steven Meisner
steve@meisners.net

Steve Meisner

Sheet: /
File: Thermostat.kicad_sch

Title: Smart Thermostat

Size: A4 Date: 2023-06-22

KiCad E.D.A. kicad 6.0.11+dfsg-1-bpo11+1

Rev: 0.5.1

Id: 1/2

NOTE: I03, I045 and I046 are strapping pins and should be avoided. They are used during ESP32 boot sequence.

U5: ESP32-S3-WROOM-1-N16

EN: 3V3

100nF(0.1uF)

C14: 22uF

C15: 22uF

SW1: Boot

C16: 1uF

LED_COOL: 4

HVAC_FAN: 5

HVAC_HEAT: 6

HVAC_COOL: 7

HVAC_RVALV: 12

LIGHT_SENS: 17

TFT_CS: 18

TFT_RESET: 19

TFT_DC: 20

TFT_MOSI: 21

TFT_CLK: 22

LD_RX: 8

LD_TX: 9

BUZZER: 10

MOTION: 11

USB_D-: 13

USB_D+: 14

TFT_MISO: 23

SCL: 28

SDA: 29

LED_FAN: 30

LED_HEAT: 31

SWD_TCK: 32

SWD_TDO: 33

SWD_TDI: 34

SWD_TMS: 35

TOUCH_CS: 24

TOUCH_IRQ: 25

SW2: Reset

R19: 10k

C19: 1uF

EN: 3V3

R20: 10k

R21: 10k

SCL: 3V3

SDA: 3V3

J9: USB_C_Receptacle_USB2.0

VBUS: A4

CC1: A5

CC2: B5

D-: A7

D+: B7

SBU1: A8

SBU2: B8

SHIELD: S1

A1: GND

L3: 600ohm

D10: D_Zener

R16: 1K

D11: LED

C17: 22pF

C18: 22pF

USB_D+: USB_D+

USB_D-: USB_D-

NOTE: USB shield is intentionally not connected. This port will be connected to a PC, which probably has its USB shield connected to Earth. Our GND and Earth must be isolated.

(C) 2023 Steven Meisner
steve@meisners.net
Steve Meisner
Sheet: /Processor/
File: Thermostat-processor.kicad_sch
Title: Smart Thermostat
Size: A4 Date: 2023-06-22 Rev: 0.5.1
KiCad E.D.A. kicad 6.0.11+dfsg-1-bpo11+1 Id: 2/2

Id: 2/2