THERMOCOUPLE INPUT

C1 0.1uF
IC1
+Vs 7   OUT 6 — TEMP
        SENSE 5
−Vs 3
        REF 2
TC1 THERMOCOUPLE
T+ 1
T− 2
R2 4.7kΩ
C2 1uF
+IN 8
−IN 1   NC 4
AD8495
R4 1MΩ
R3 4.7kΩ
C5 1uF
C4 10uF

PROGRAMMING AND DEBUGGING

C9 0.1uF
IC3
RESET 11
TXD 1 — USART_RX
3V3OUT 10   RXD 4 — USART_TX
VCCIO 12   RTS 2 — RESET
500mA F1
VCC 3   CTS 6
C11 10uF
C10 0.1uF
GND 5   CBUS0 15
GND 13   CBUS1 14
USBDM 9 CBUS2 7
USBDP 8 CBUS3 6
R5 330Ω   TXLED LED1
R6 330Ω   RXLED LED2
FT230X
J1 USB
VBUS 1
D− 2
D+ 3
NC 4
GND 5
R7 27Ω
R8 27Ω
C12 47pF
C13 47pF
PWR_FLAG
VCC

P1
MISO 1   MISO   VCC 2
SCK 3   SCK   MOSI 4 — MOSI
RESET 5   RESET GND 6
AVR_ISP
VCC

DISPLAY

LED6
R21 180Ω SEGA   11 A
R24 180Ω SEGB   7 B   COM1 12 — Q1 — DIG1
R26 180Ω SEGC   4 C   COM2 9 — Q3 — DIG2
R27 180Ω SEGD   2 D   COM3 8 — Q4 — DIG3
R28 180Ω SEGE   1 E   COM4 6 — Q5 — DIG4
R30 180Ω SEGF   10 F
R32 180Ω SEGG   5 G
R33 180Ω SEGDP   3 DP
7-SEG-4-NUM-DISPLAY
R17 10kΩ R19 1kΩ MMBT4401
R22 10kΩ R25 1kΩ MMBT4401
R29 10kΩ R31 1kΩ MMBT4401
R34 10kΩ R35 1kΩ MMBT4401

MCU

VCC
R1 opt10kΩ   RESET 29
IC2
RESET(PC6)   PC5(ADC5/SCL/PCINT13) 28 — ENC_B
              PC4(ADC4/SDA/PCINT12) 27 — ENC_A
GND 21   PC3(ADC3/PCINT11) 26 — DIG4
GND 5   PC2(ADC2/PCINT10) 25 — DIG3
GND 3   PC1(ADC1/PCINT9) 24 — DIG2
              PC0(ADC0/PCINT8) 23 — DIG1
C3 0.1uF
C6 0.1uF   VCC 6
C7 0.1uF   VCC 4
C8 0.1uF   AVCC 18   PD7(PCINT23/AIN1) 11 — HEAT
              AREF 20   PD6(PCINT22/OC0A/AIN0) 10 — LED_STOP
                         PD5(PCINT21/OC0B/T1) 9 — LED_START
SEGB 8 XTAL2(PB7)   PD4(PCINT20/XCK/T0) 2 — SET
SEGF 7 XTAL1(PB6)   PD3(PCINT19/OC2B/INT1) 1 — STOP
                         PD2(INT0/PCINT18) 32 — START
SCK SEGE 17 PB5(SCK/PCINT5)
MISO SEGD 16 PB4(PCINT4/MISO)   PD1(TXD/PCINT17) 31 — USART_TX
MOSI SEGDP 15 PB3(PCINT3/OC2A/MOSI) PD0(RXD/PCINT16) 30 — USART_RX
     SEGC 14 PB2(PCINT2/SS/OC1B)
     SEGG 13 PB1(PCINT1/OC1A)   ADC7 22 — TEMP
     SEGA 12 PB0(PCINT0/CLKO/ICP1) ADC6 19
ATMEGA328P

SET TEMPERATURE INPUT

VCC   VCC
R9 opt10kΩ   SET   ROT1
                   SW1 A — ENC_A
                   B
                   SW2 C — ENC_B
                   R10 opt10kΩ
                   R11 opt10kΩ
SET TEMP

SWITCH INPUTS

R12 opt10kΩ   VCC
S1 START   START
R13 180Ω LED3 ON   — LED_START
R14 opt10kΩ   VCC
S2 STOP   STOP
R15 180Ω LED4 OFF — LED_STOP

AC RELAY

VCC
R16 180Ω   K1
           IN+ 3 OUT2 2
R18 330Ω   IN− 4 OUT1 1
           S212S01
LED5 HOT
Q2 MMBT4401
R20 2.2kΩ — HEAT
R23 10kΩ
VCC
J2 TOASTER