AC INPUT CONNECTOR
J3 AC_PWR_IN — L1, L2, L3, NEUTRAL, EARTH

5A 5W PS1 HLK-5M05
C16 100nF, C17 100nF, C20 100nF, C21 100nF

U2 LM1117-3.3
C10 10uF, C13 1uF

CONTROLLER
U1 ATmega2560-16AU
R1 10K, C4 4.7nF (reset)
Y1 E-16.000-12-1010-M, C2 22pF, C1 22pF, C3 100nF
decoupling caps: C5 100nF, C6 100nF, C7 100nF, C8 100nF, C9 100nF

RTD SENSOR INTERFACE
U3 MAX31865ATP+T
R2 430R_0.1%, C14 100nF, C18 100nF, C11 100nF
J1 RTD_TANK_SENSOR
Rref= 430R which is connected to the bias pin
3 WIRE SENSOR CONNECTION

U4 MAX31865ATP+T
R3 430R_0.1%, C15 100nF, C19 100nF, C12 100nF
J2 RTD_BOILER_SENSOR
Rref= 430R which is connected to the bias pin
3 WIRE SENSOR CONNECTION

START BUTTON
U5 TL1240GQ1JCLR
R14 1K, R13 200R, Q1 BSS138
BUTTON WITH GREEN BACLIGHT

ON/OFF BUTTON
U6 TL1240GQ1JCLR
R17 1K, R16 200R, Q2 BSS138
BUTTON WITH RED BACLIGHT

INTERRUPT PINS

SCREEN CONNECTOR
J8 3-1734592-0
decoupling+ bulk caps: C25 10uF, C26 0.1uF
PULL UPS: R9 4.7K, R12 4.7K
C23 4.7uF_25V, R15 910K
R10 1k, R11 1k
decoupling+ bulk caps: C22 0.1uF, C24 4.7uF
PULLING D/C TO GND INITIZILES THE OLED SCREEN ADDRESS AS 0X3C

display:https://www.buydisplay.com/green-2-4-inch-graphic-oled-display-128x64-serial-spi-i2c-ssd1309
2:https://www.alibaba.com/product-detail/2-42-2-4-inch-128_60646082817.html

SW1 SET, SW3 ARROW_RIGTH, SW2 ARROW_LEFT (SW_Push)

MAGNETIC DOOR SENSOR CONNECTOR
J4 MAG_DOOR_SENSOR, R4 1K, DOOR_SENSOR

DRAIN OPTICAL WATER LEVEL SENSOR
J6 Conn_01x04_Male — blue_1, white_1, yellow_1, red_1
R8 4.7K, R6 390R

HIGH LEVEL WATER SENSOR(FLOAT SWITCH)
J7 FLOAT SWITCH CONN — FLOAT_SWITCH

OPTICAL WATER LEVEL SENSOR LOW
J5 Conn_01x04_Male — blue, white, yellow, red
R7 4.7K, R5 390R

OUTPUT AND ACTUATORS
Sheet: AC_ACTUATORS
DRAIN_PUMP, WASH_PUMP, SOLENOID
L1_3phase_heater_pwm, L2_3phase_heater_pwm, L3_3phase_heater_pwm
single_phase_heater_pwm, peristaltic_pump_1, peristaltic_pump_2
File: AC_ACTUATORS.sch

ZERO DETECT CIRCUIT
R? 47K, R? 47K, D? MB6S, U? EL817, R? 1K
USED IN TIMING OPERATION FOR TRIAC FIRING ANGLE CONTROL

Sheet: /
File: Steel_form_Dish_washer.sch
Title:
Size: A3   Date: Rev:
KiCad E.D.A. kicad (5.1.10)-1   Id: 1/2

DRAIN PUMP ON/OFF CONTROL

+5V
K2
9-1440003-0
L1
1
3
4
2
5
J10
DRAIN PUMP CONNECTOR
2
1
NEUTRAL

DRAIN_PUMP
R19
1K
Q4
WST2N7002K
R22
10K
GND
GND

WASH PUMP ON/OFF CONTROL

+5V
K3
9-1440003-0
L1
1
3
4
2
5
J11
WASH PUMP CONNECTOR
2
1
NEUTRAL

WASH_PUMP
R20
1K
Q5
WST2N7002K
R23
10K
GND
GND

SOLENOID CONTROL

+5V
K1
9-1440003-0
L1
1
3
4
2
5
J9
SOLENOID CONNECTOR
2
1
NEUTRAL

SOLENOID
R18
1K
Q3
WST2N7002K
R21
10K
GND
GND

BOILER HEATER
TRIAC HEATER CONTROL AND DRIVER

L1
U7
MOC3021
R28
10K

L1_3phase_heater_pwm
R24
200R
GND

D1
Q_TRIAC_A1A2G
ELEMENT_1

L2
U9
MOC3021
R30
10K

L2_3phase_heater_pwm
R25
200R
GND

D3
Q_TRIAC_A1A2G
ELEMENT_2

L3
U10
MOC3021
R31
10K

L3_3phase_heater_pwm
R26
200R
GND

triac
D4
Q_TRIAC_A1A2G
ELEMENT_3

ELEMENT_1
ELEMENT_2
ELEMENT_3
NEUTRAL
1 2 3 4
J12
BOILER HEATER CONNECTOR

TANK HEATER
TRIAC HEATER CONTROL AND DRIVER

CURRENT LIMITING R
5/25mA=200R
DIAC (TRIAC DRIVER)
U8
MOC3021
L1
R29
10K

single_phase_heater_pwm
R27
200R
GND

triac
D2
Q_TRIAC_A1A2G
J13
TANK HEATER
TO ELEMENT
1
NEUTRAL
2
NEUTRAL

PERISTALYTIC PUMP 1

L2
U12
MOC3021
R35
10K

peristaltic_pump_1
R33
200R
GND

triac
D6
Q_TRIAC_A1A2G
J15
peristaltic_pump_1
NEUTRAL
1
2

PERISTALYTIC PUMP 2

L2
U11
MOC3021
R34
10K

peristaltic_pump_2
R32
200R
GND

triac
D5
Q_TRIAC_A1A2G
J14
peristaltic_pump_2
NEUTRAL
1
2