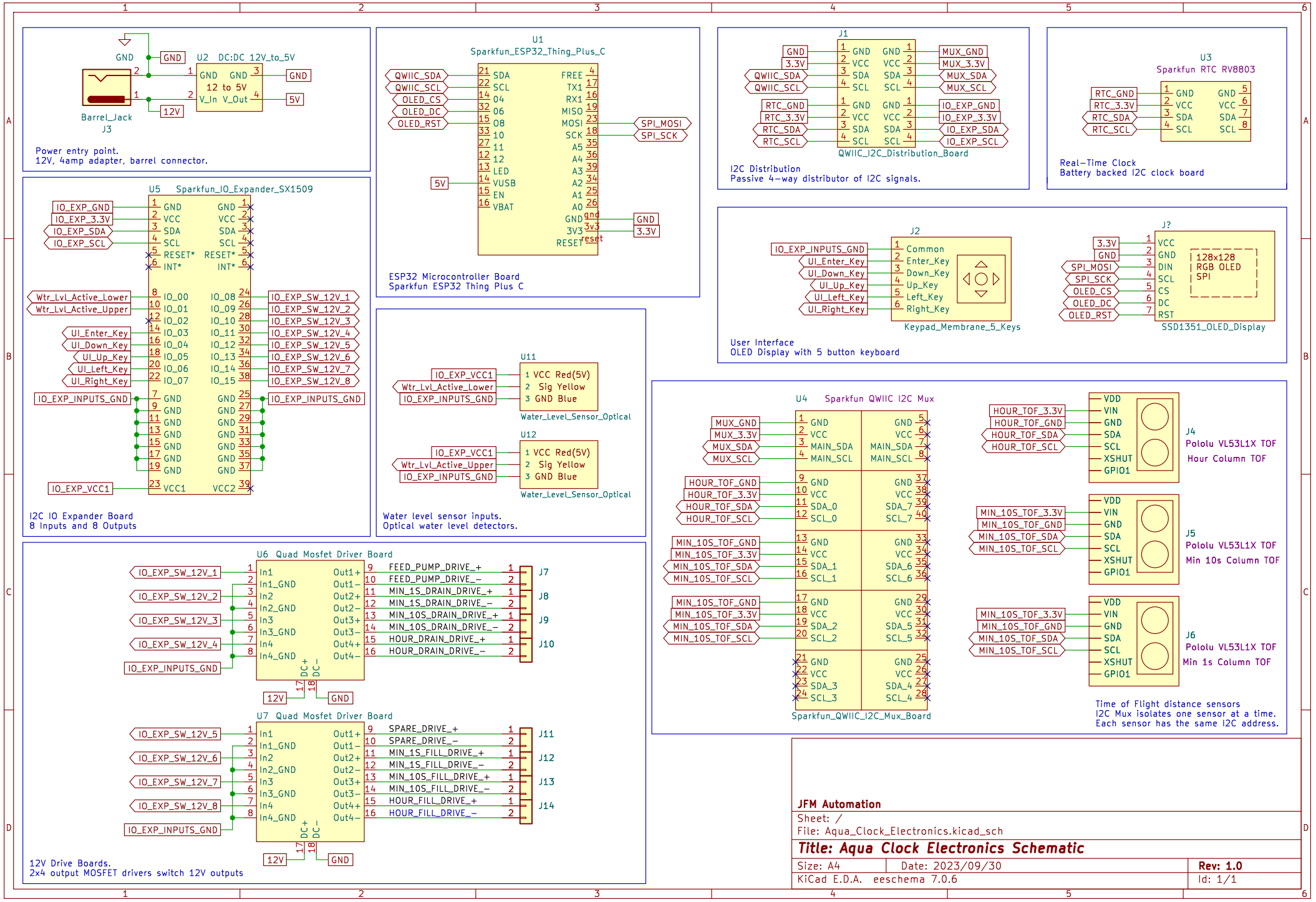
Barrel_Jack
J3
U2 DC:DC 12V_to_5V
GND
12 to 5V
V_In V_Out
12V
5V
Power entry point.
12V, 4amp adapter, barrel connector.
U1
Sparkfun_ESP32_Thing_Plus_C
QWIIC_SDA
QWIIC_SCL
OLED_CS
OLED_DC
OLED_RST
SPI_MOSI
SPI_SCK
3.3V
ESP32 Microcontroller Board
Sparkfun ESP32 Thing Plus C
J1
QWIIC_I2C_Distribution_Board
MUX_GND
MUX_3.3V
MUX_SDA
MUX_SCL
IO_EXP_GND
IO_EXP_3.3V
IO_EXP_SDA
IO_EXP_SCL
I2C Distribution
Passive 4-way distributor of I2C signals.
U3
Sparkfun RTC RV8803
RTC_GND
RTC_3.3V
RTC_SDA
RTC_SCL
Real-Time Clock
Battery backed I2C clock board
U5 Sparkfun_IO_Expander_SX1509
IO_EXP_SW_12V_1
IO_EXP_SW_12V_2
IO_EXP_SW_12V_3
IO_EXP_SW_12V_4
IO_EXP_SW_12V_5
IO_EXP_SW_12V_6
IO_EXP_SW_12V_7
IO_EXP_SW_12V_8
IO_EXP_INPUTS_GND
IO_EXP_VCC1
Wtr_Lvl_Active_Lower
Wtr_Lvl_Active_Upper
UI_Enter_Key
UI_Down_Key
UI_Up_Key
UI_Left_Key
UI_Right_Key
I2C IO Expander Board
8 Inputs and 8 Outputs
U11
Water_Level_Sensor_Optical
U12
Water level sensor inputs.
Optical water level detectors.
J2
Keypad_Membrane_5_Keys
J?
128x128
RGB OLED
SPI
SSD1351_OLED_Display
User Interface
OLED Display with 5 button keyboard
U4 Sparkfun QWIIC I2C Mux
Sparkfun_QWIIC_I2C_Mux_Board
J4
Pololu VL53L1X TOF
Hour Column TOF
J5
Pololu VL53L1X TOF
Min 10s Column TOF
J6
Pololu VL53L1X TOF
Min 1s Column TOF
Time of Flight distance sensors
I2C Mux isolates one sensor at a time.
Each sensor has the same I2C address.
U6 Quad Mosfet Driver Board
FEED_PUMP_DRIVE_+
FEED_PUMP_DRIVE_-
MIN_1S_DRAIN_DRIVE_+
MIN_1S_DRAIN_DRIVE_-
MIN_10S_DRAIN_DRIVE_+
MIN_10S_DRAIN_DRIVE_-
HOUR_DRAIN_DRIVE_+
HOUR_DRAIN_DRIVE_-
J7
J8
J9
J10
U7 Quad Mosfet Driver Board
SPARE_DRIVE_+
SPARE_DRIVE_-
MIN_1S_FILL_DRIVE_+
MIN_1S_FILL_DRIVE_-
MIN_10S_FILL_DRIVE_+
MIN_10S_FILL_DRIVE_-
HOUR_FILL_DRIVE_+
HOUR_FILL_DRIVE_-
J11
J12
J13
J14
12V Drive Boards.
2x4 output MOSFET drivers switch 12V outputs
JFM Automation
Sheet: /
File: Aqua_Clock_Electronics.kicad_sch
Title: Aqua Clock Electronics Schematic
Size: A4
Date: 2023/09/30
Rev: 1.0
KiCad E.D.A. eeschema 7.0.6
Id: 1/1