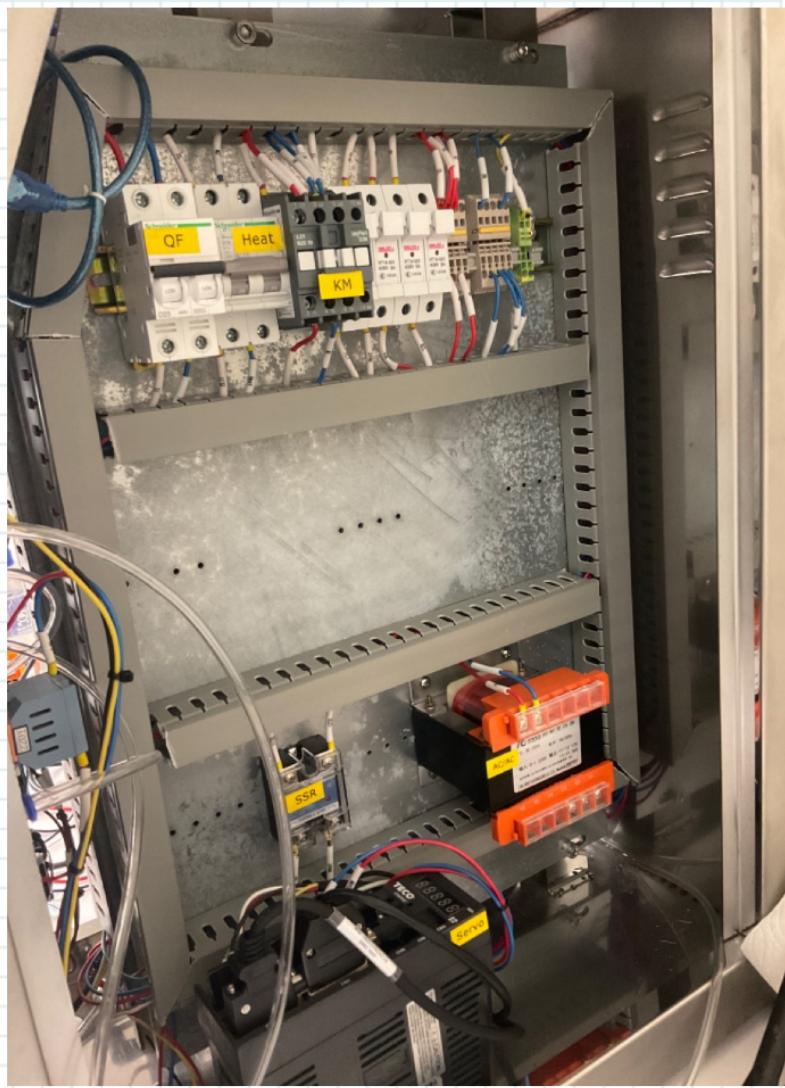


Left side

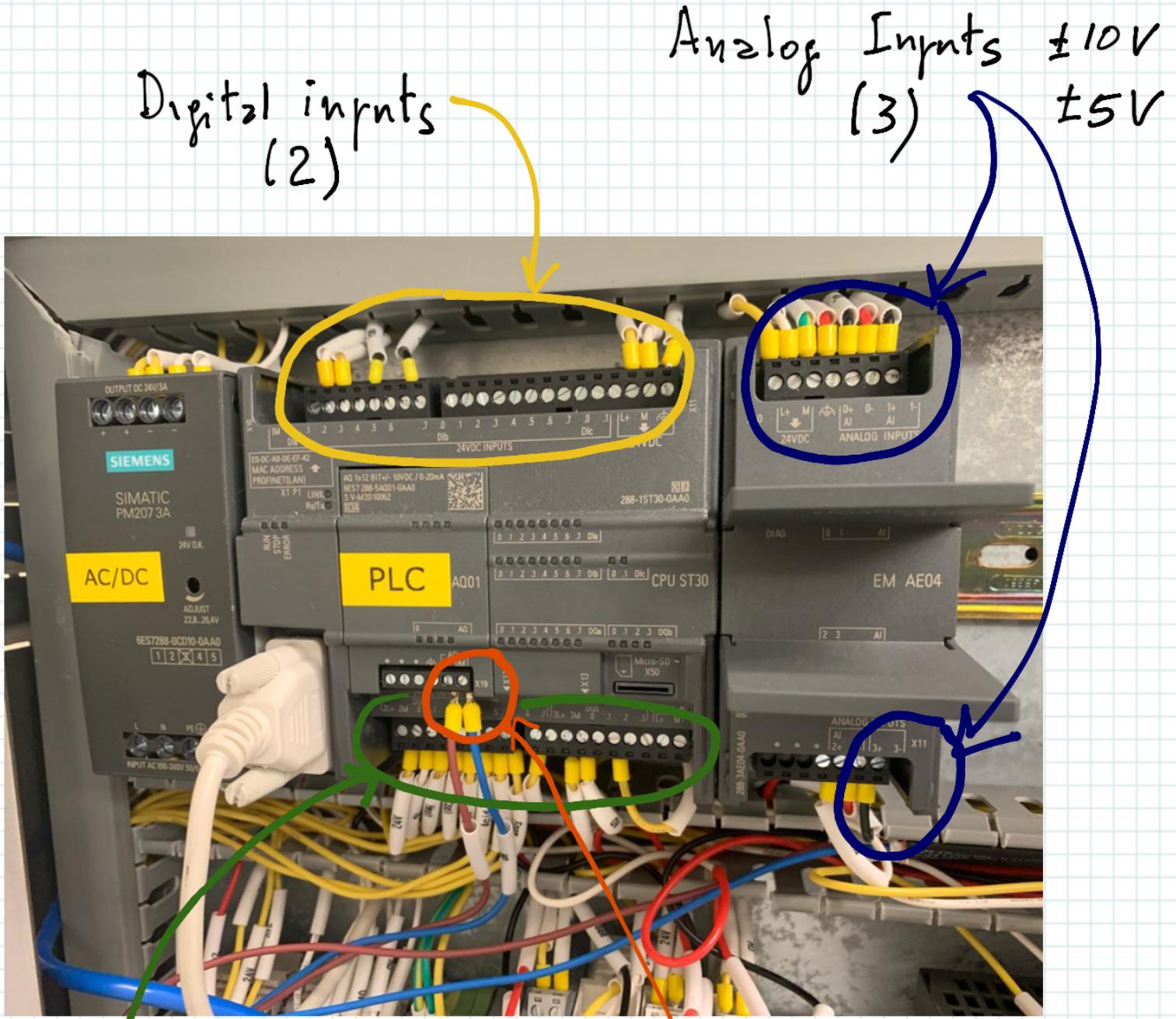


Control Unit

Right side



# PLC I/Os

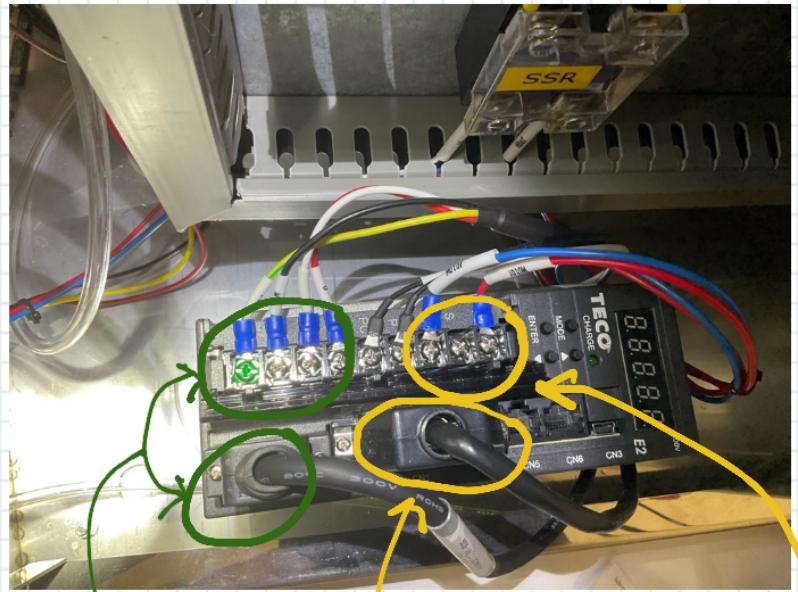
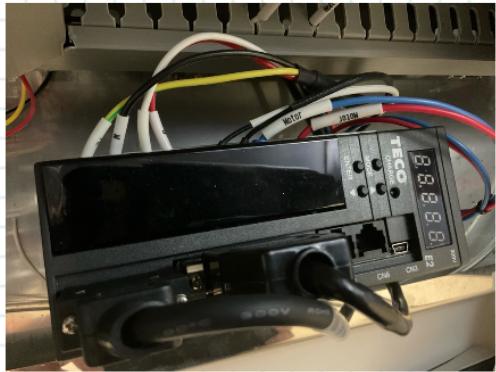


Digital output (8)

Analog output (1)  
0-10 VDC

# Igeller motor wiring diagrams

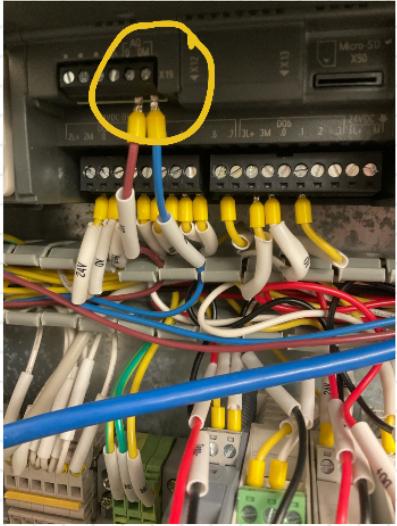
Teco servo  
controller



motor harness  
2 connectors

unit on/off  
speed control

Speed control  
Analog output 0-10 V

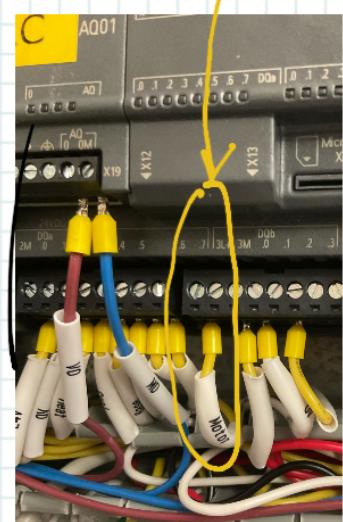


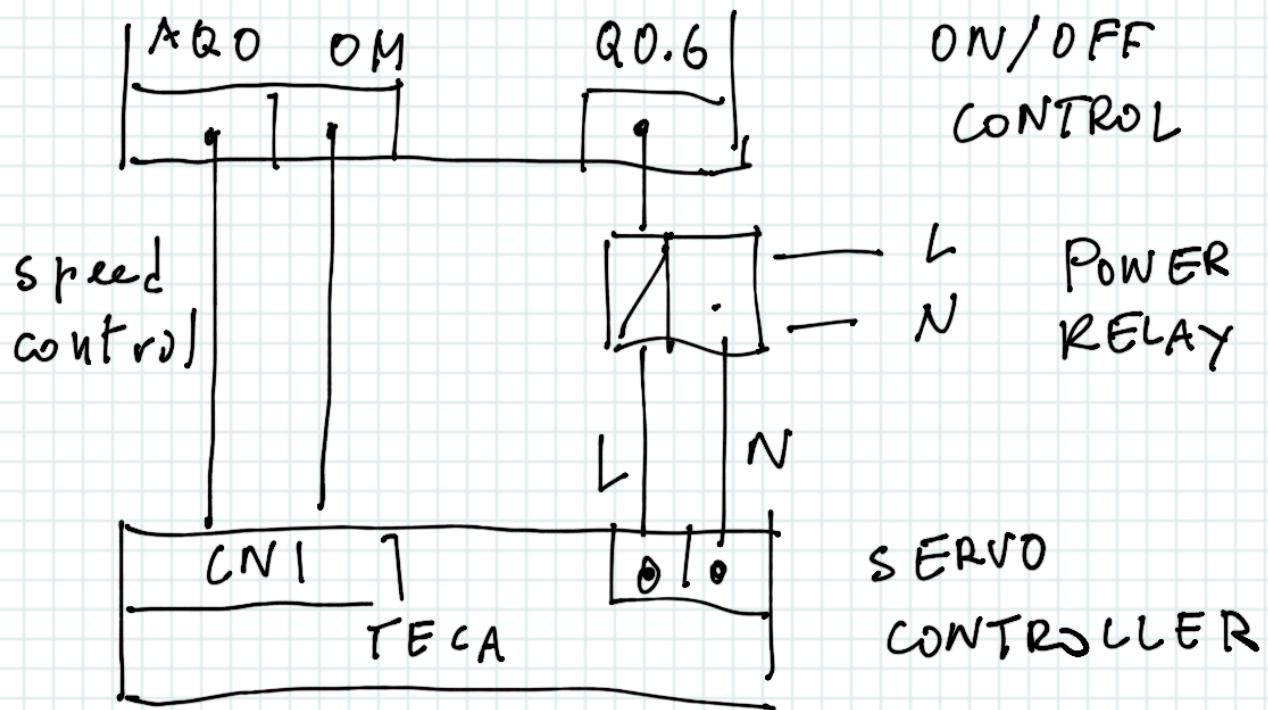
AQ01  
[ 0 0M ]



Servo on/off control  
relay K7

PLC Q0.6  
output





# Heater control



Heater and OV control signals

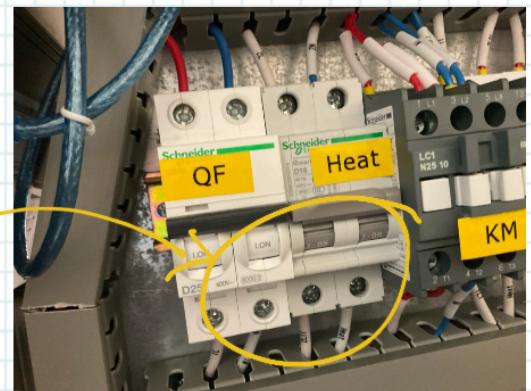
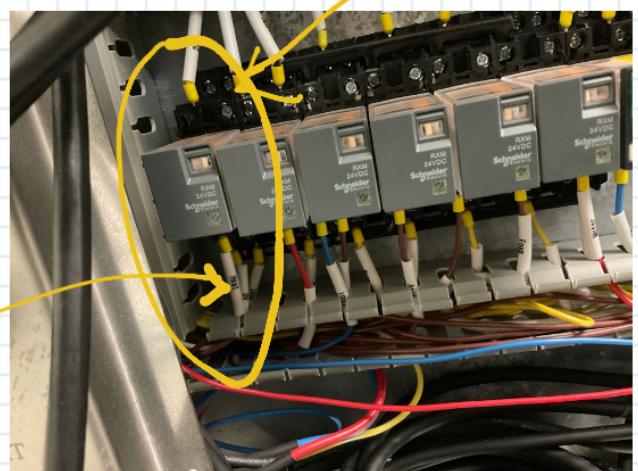
2L+      24V  
2M      OV  
QD.O output      heater }  
connected to relay K1

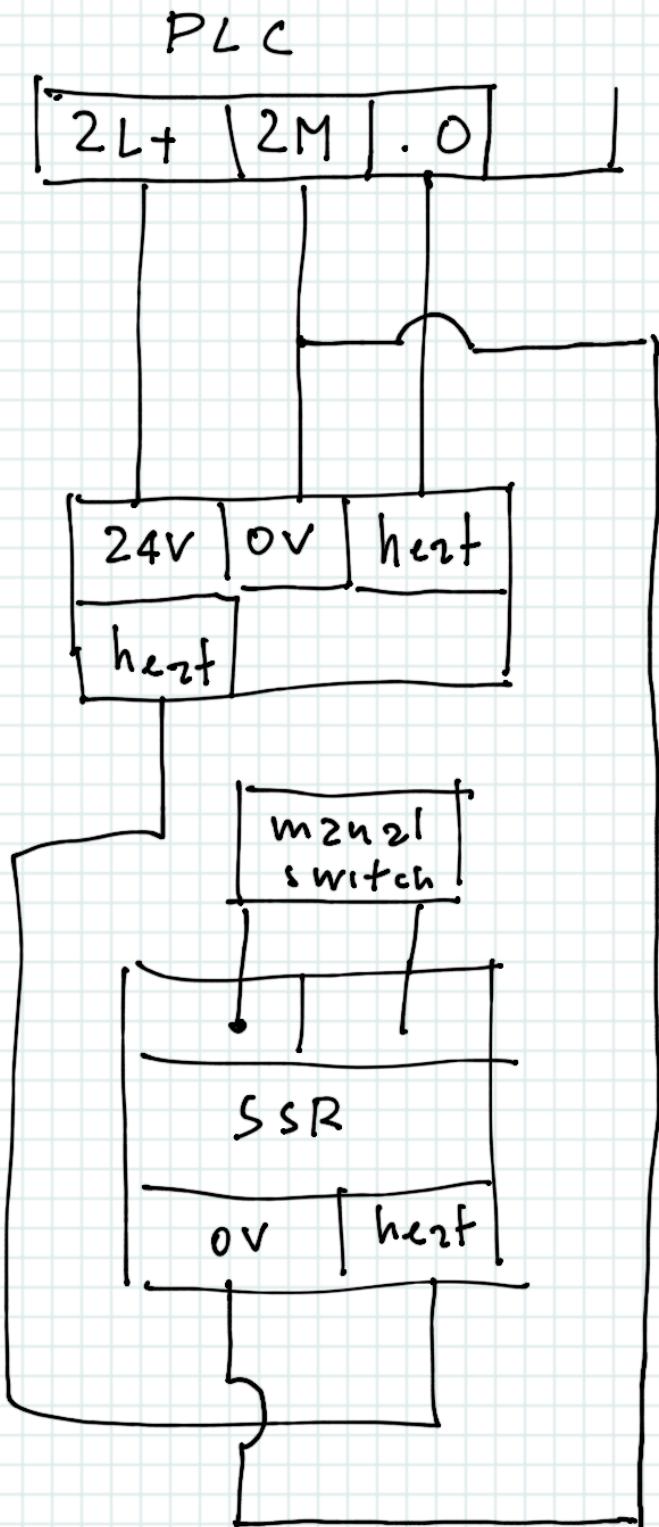
Power solid state relay

heater signal



manual switch



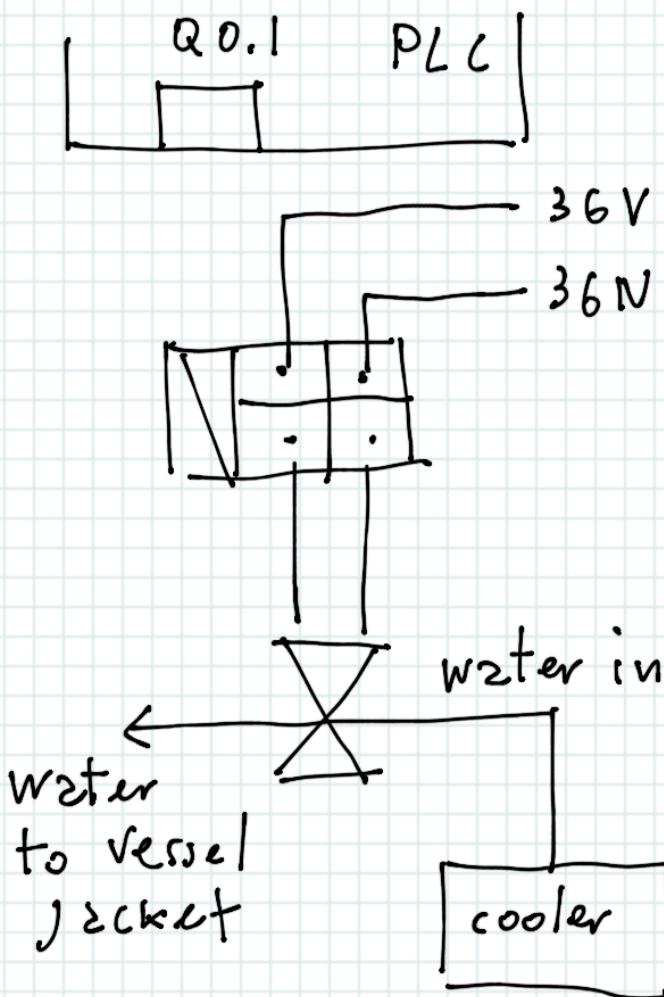


# Water solenoid control

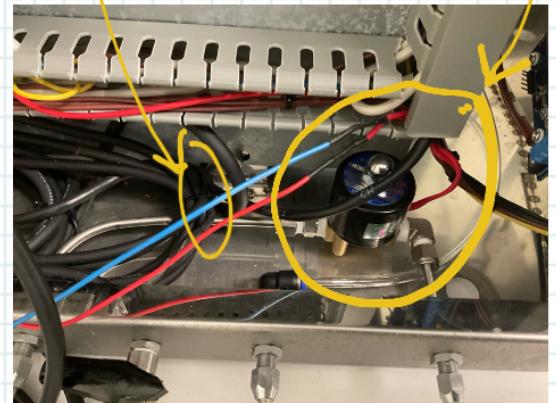


Cool signal to control  
the water solenoid valve

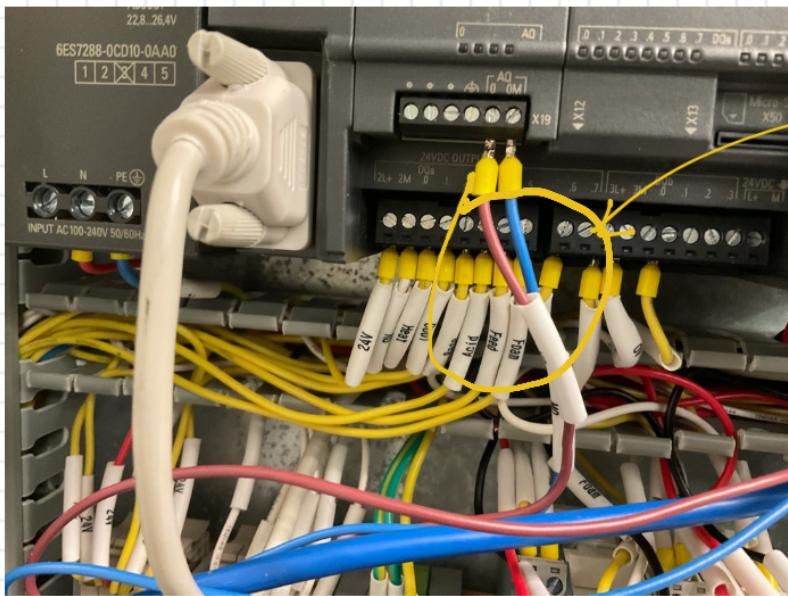
Q0.1 output connected to  
relay K2



Solenoid  
value  
36V

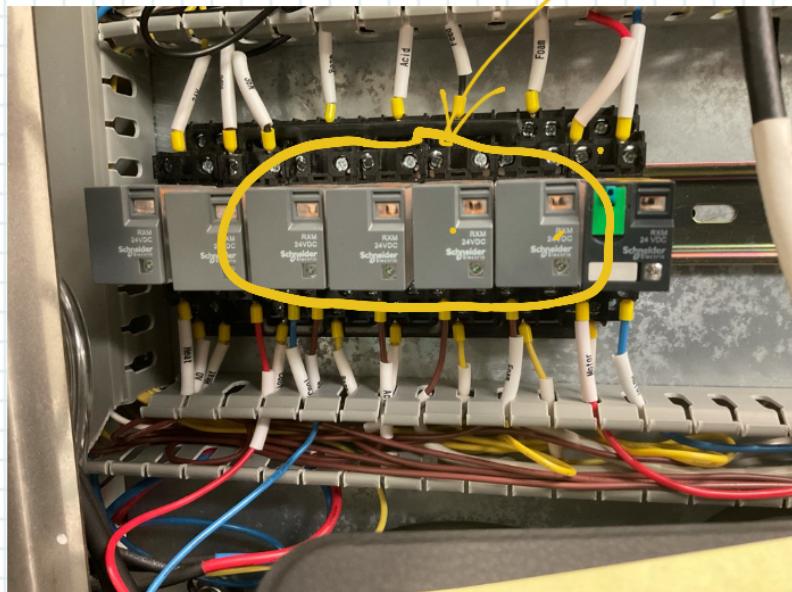


# Peristaltic Pumps Control



PLC	Relay
Base	Q0.2 k3
Acid	Q0.3 k4
Feed	Q0.4 k5
Foam	Q0.5 k6 outputs

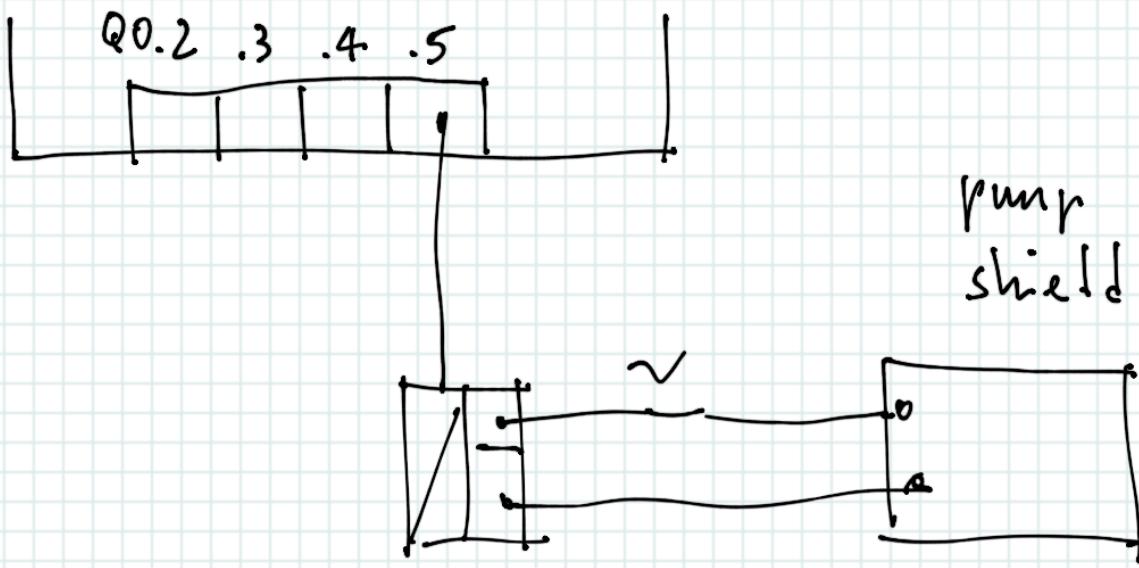
ON/OFF control  
signals to trip  
the k3-k6 relays



The relay 2 outputs  
are used by the shields

black  
and  
brown  
wires





Pumps tube loading

# Sensors

A1 0+  
0- Temperature

A1 1+  
1- Ph



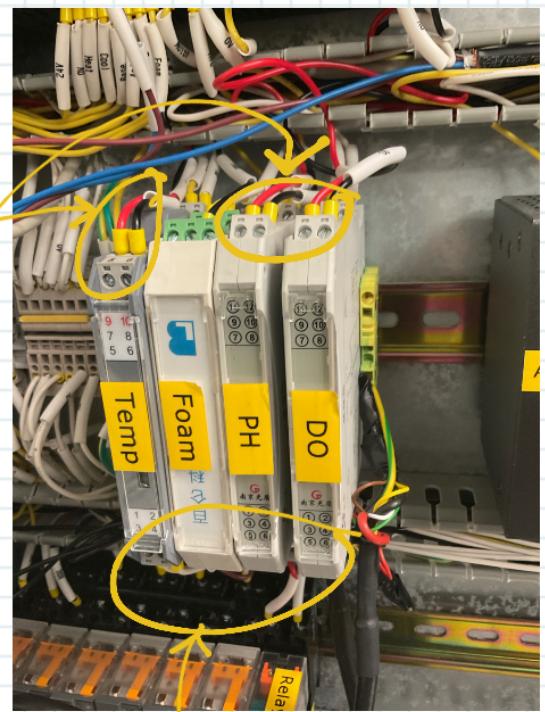
EM AE04 Analog I/O  
expansion module  
analog 4 x inputs  
range  $\pm 10V, \pm 5V, \pm 2.5V$

Sensors analog signals  
are amplified by these  
modules:

Analog  
outputs

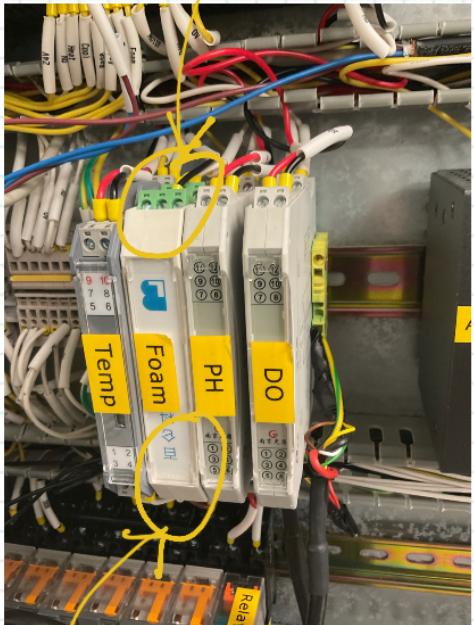


A1 3+ Dissolved oxygen  
3-

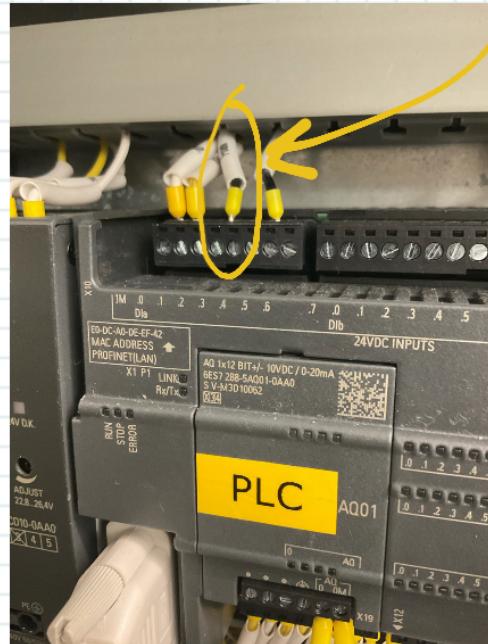


Inputs from probes  
in the 1-20 mV range

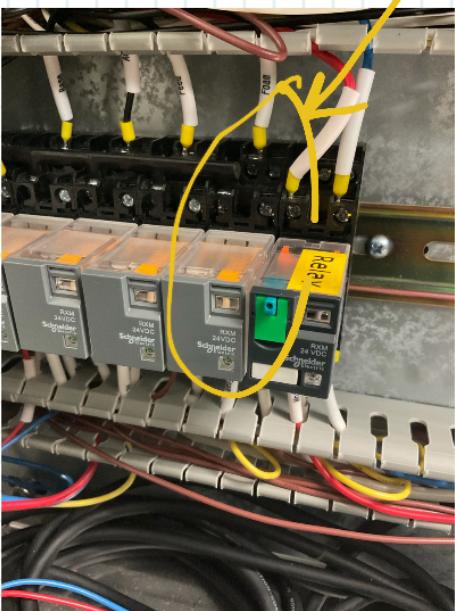
Foam sensor is binary ON/OFF  
digital output



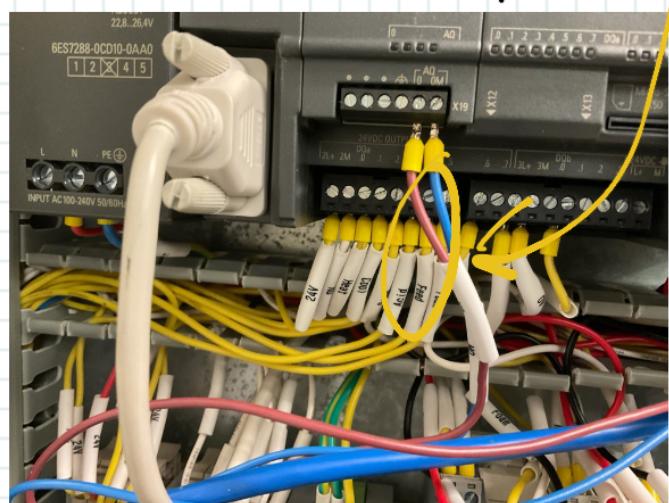
I0.2 PLC input



foam pump actuator k6



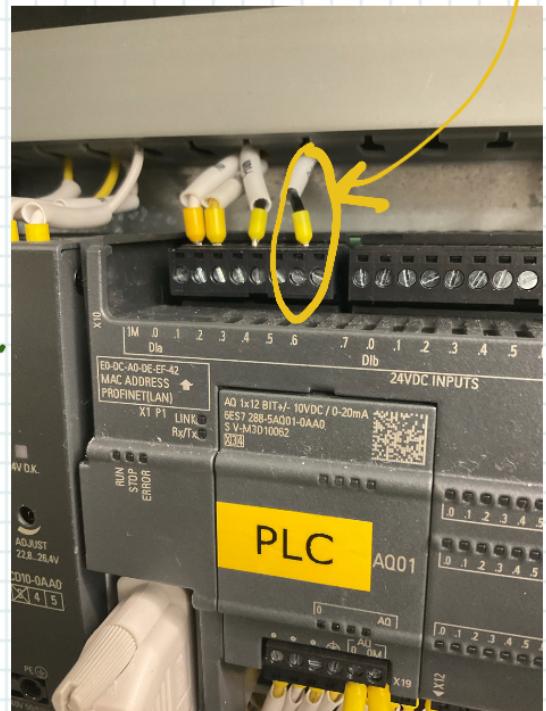
Q0.5 output  
used to trip  
k6 relay



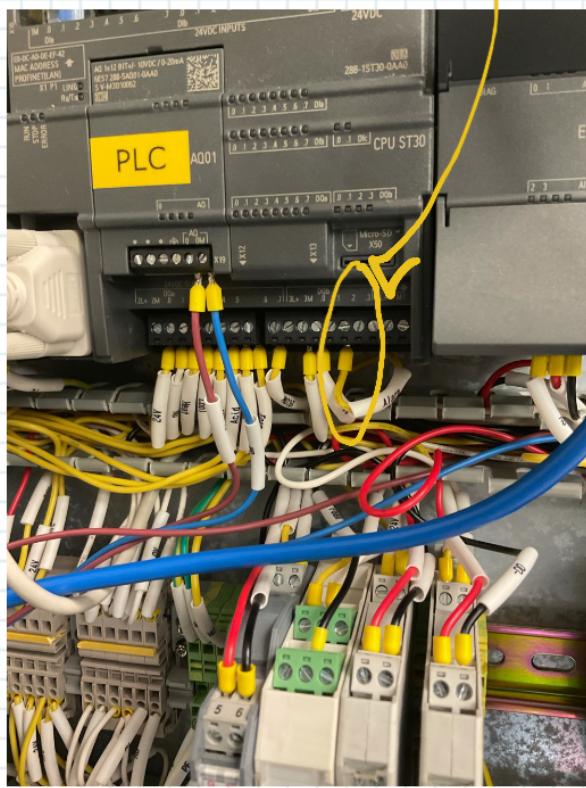
# Emergency Stop



I0.5 PLC input



Qb.0 output  
buzzer activation



Buzzer

