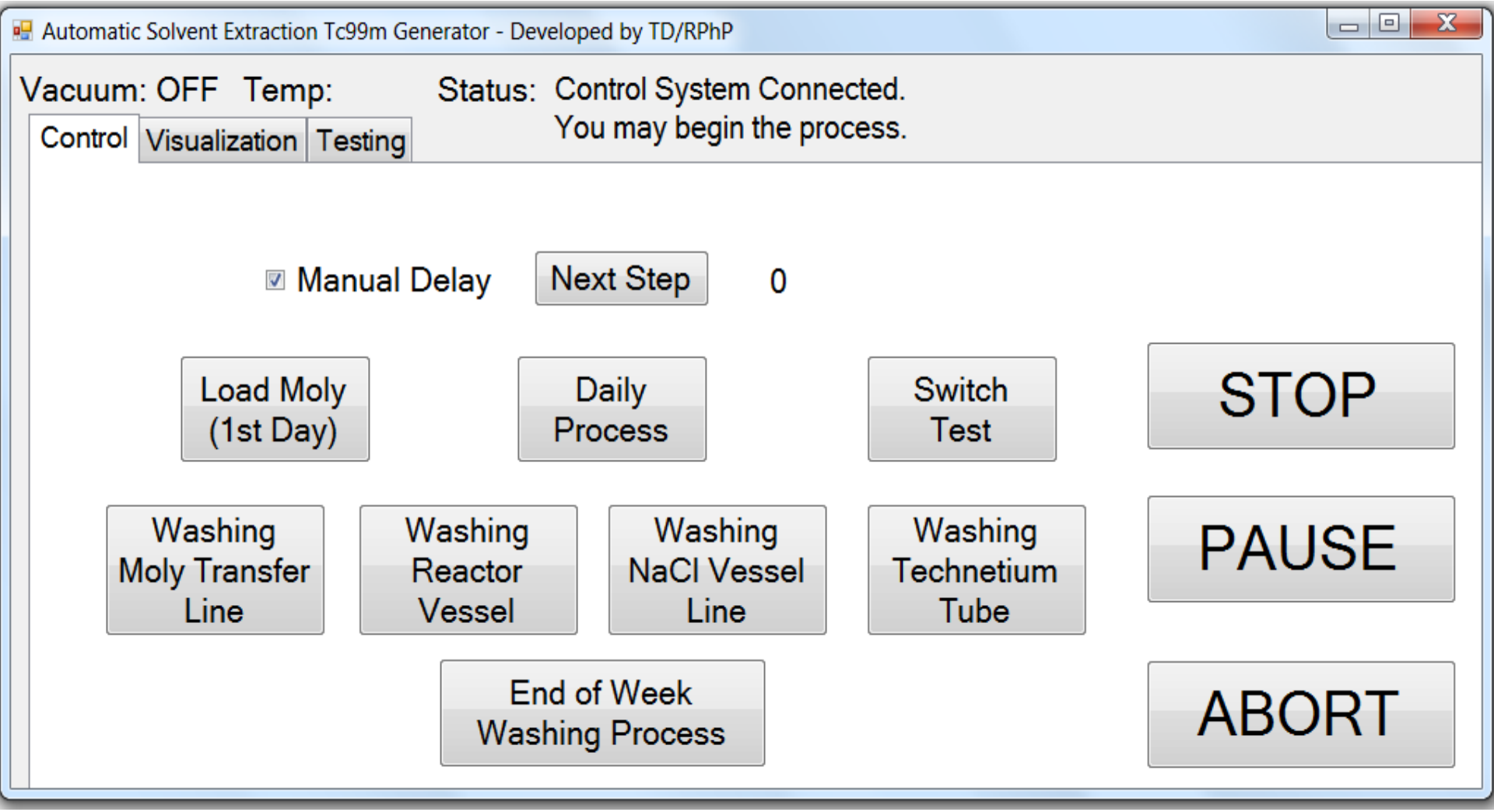
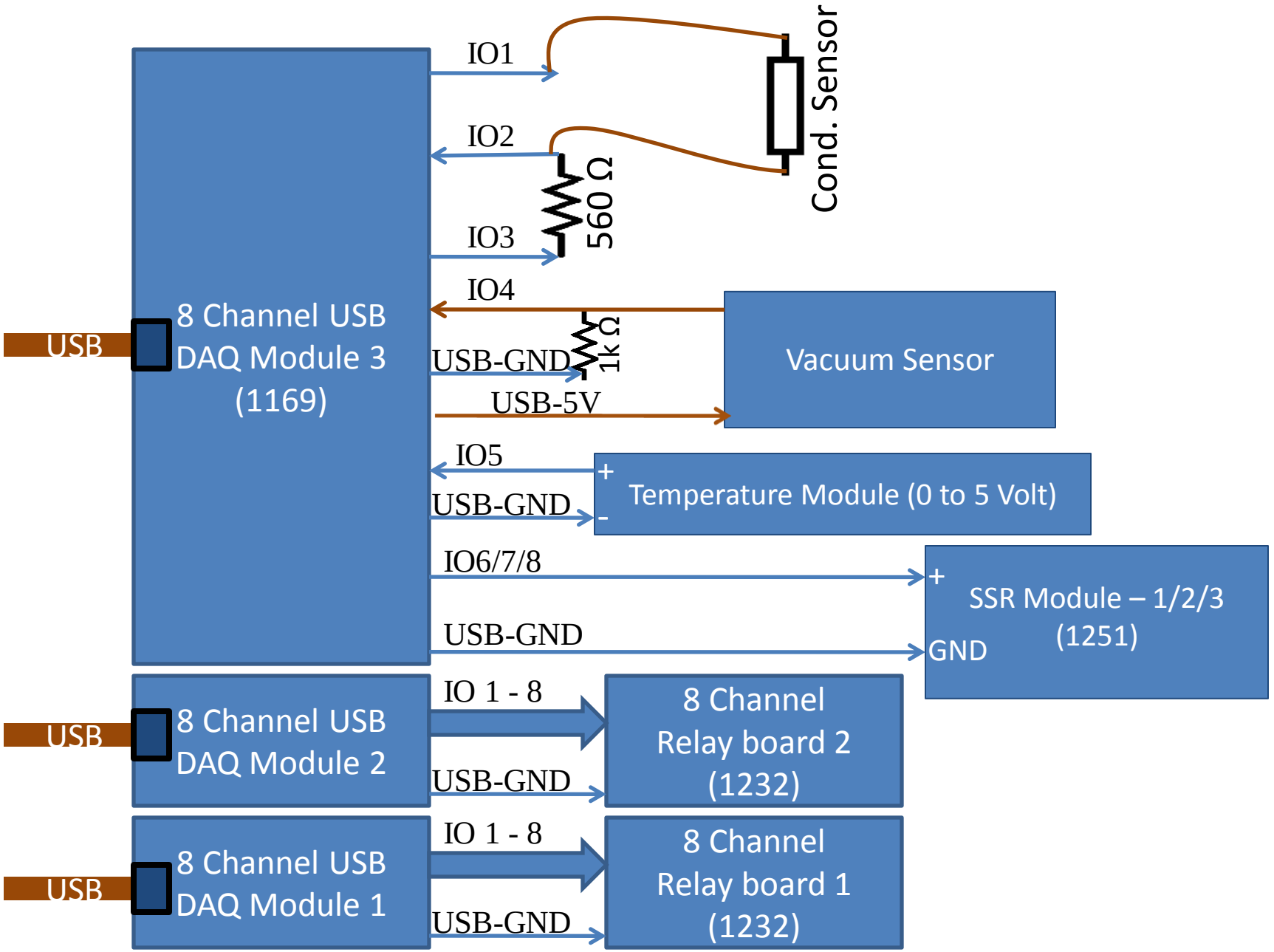
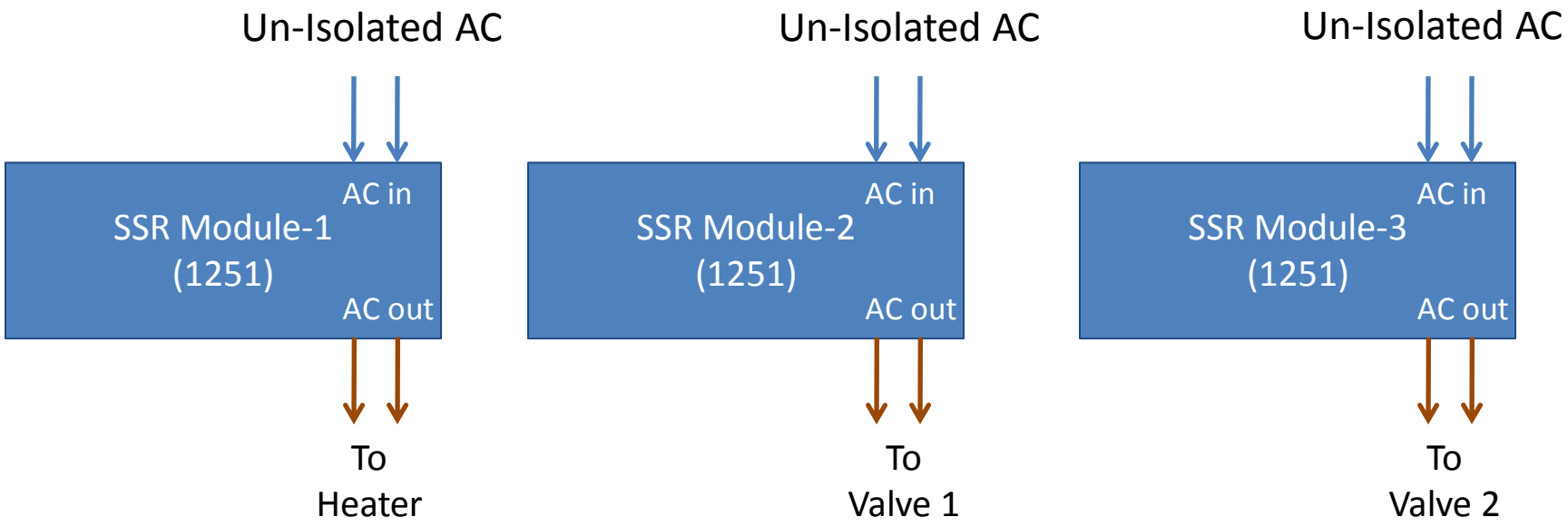
Automatic Solvent Extraction based Tc99m Generator

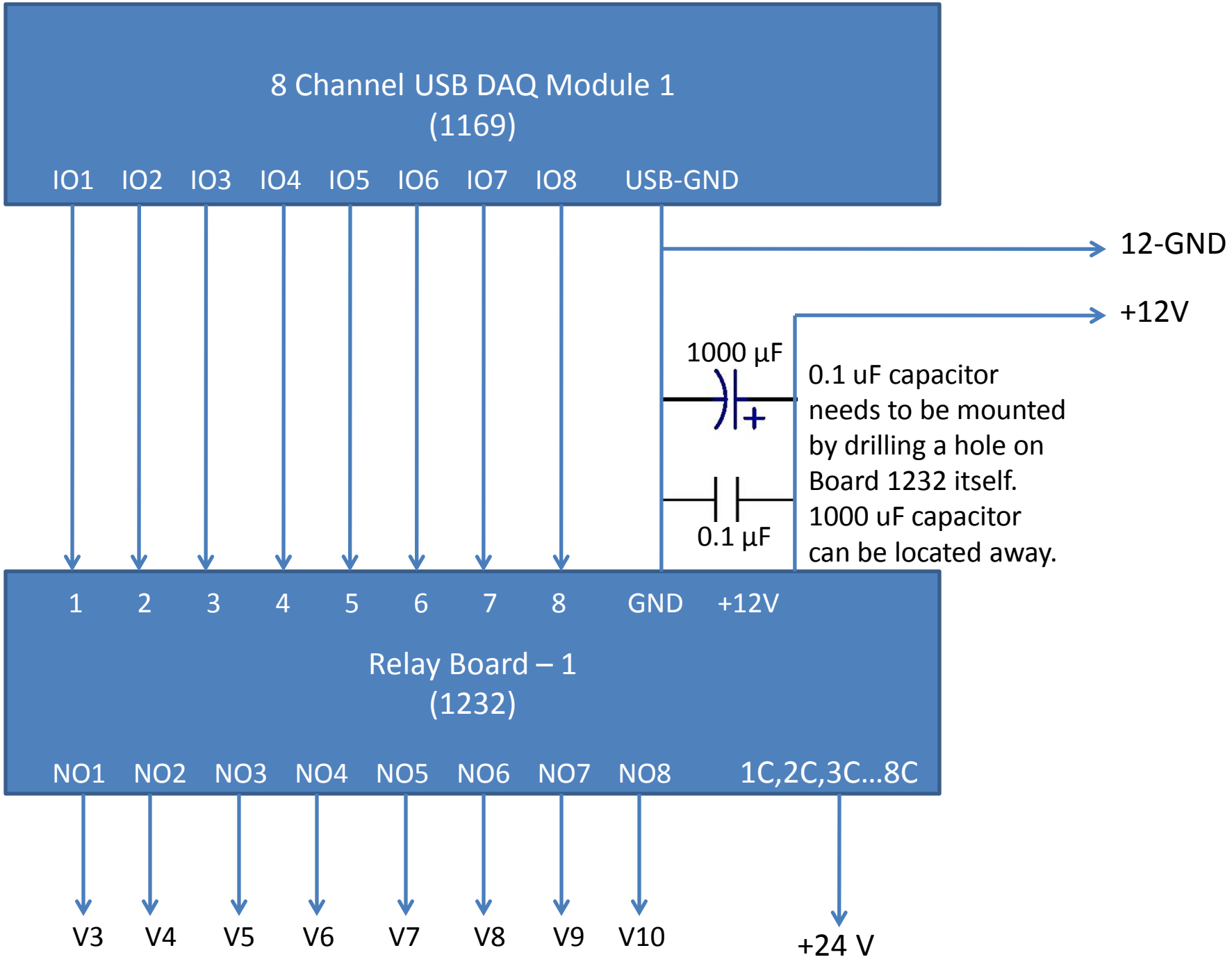
Control Software Screenshot

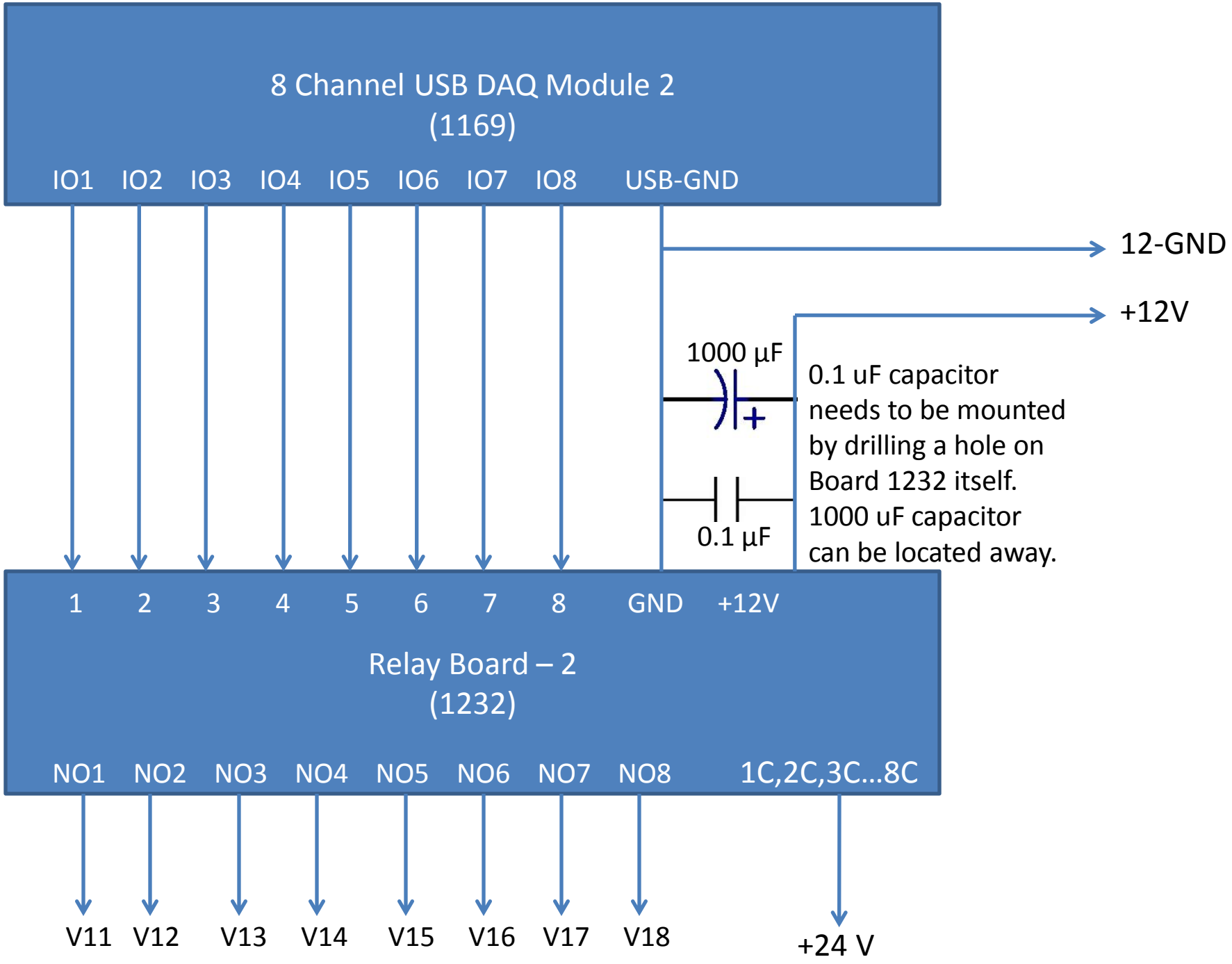


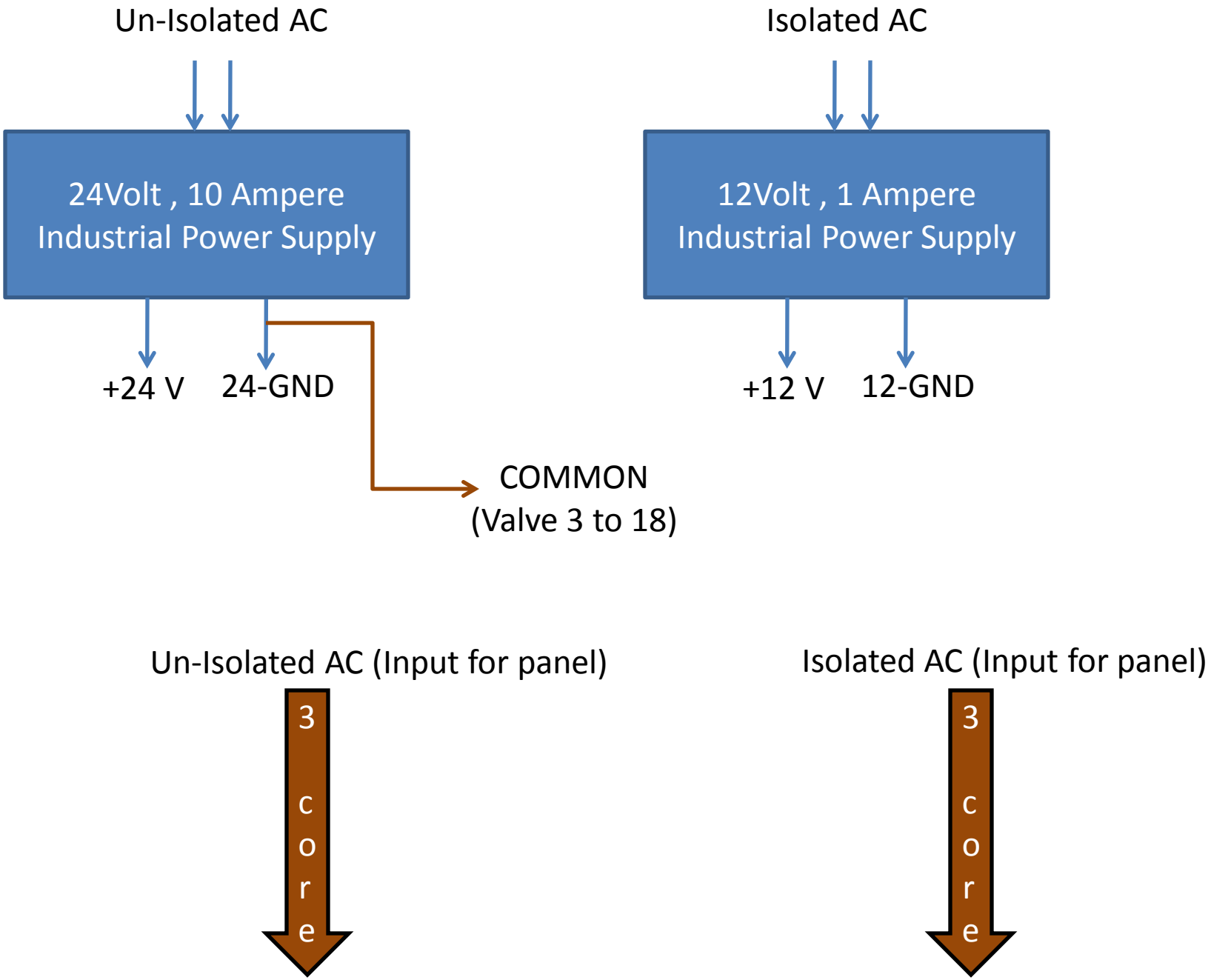
Control Hardware Architecture


IO1
IO2
IO3
IO4
USB-GND
USB-5V
IO5
USB-GND
IO6/7/8
USB-GND
IO 1 - 8
USB-GND
IO 1 - 8
USB-GND
560 Ω
1k Ω
Cond. Sensor
USB
8 Channel USB DAQ Module 3 (1169)
Vacuum Sensor
+
-
Temperature Module (0 to 5 Volt)
+
GND
SSR Module – 1/2/3 (1251)
USB
8 Channel USB DAQ Module 2
8 Channel Relay board 2 (1232)
USB
8 Channel USB DAQ Module 1
8 Channel Relay board 1 (1232)

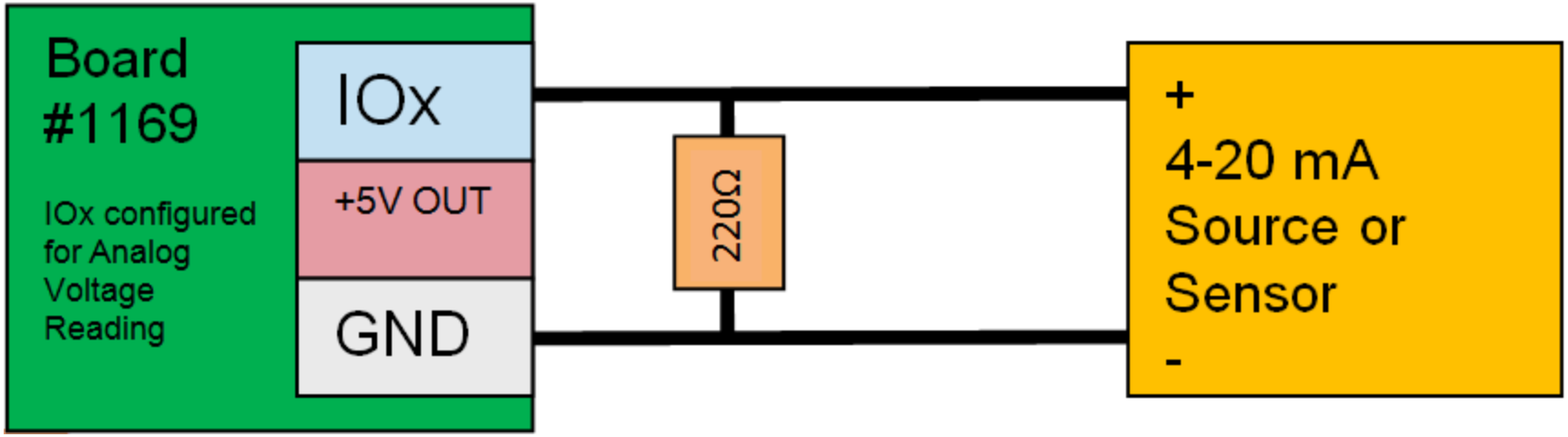

Un-Isolated AC
AC in
SSR Module-1
(1251)
AC out
To
Heater
Un-Isolated AC
AC in
SSR Module-2
(1251)
AC out
To
Valve 1
Un-Isolated AC
AC in
SSR Module-3
(1251)
AC out
To
Valve 2


8 Channel USB DAQ Module 1
(1169)
IO1 IO2 IO3 IO4 IO5 IO6 IO7 IO8 USB-GND
12-GND
+12V
1000 µF
0.1 uF capacitor needs to be mounted by drilling a hole on Board 1232 itself. 1000 uF capacitor can be located away.
0.1 µF
1 2 3 4 5 6 7 8 GND +12V
Relay Board – 1
(1232)
NO1 NO2 NO3 NO4 NO5 NO6 NO7 NO8 1C,2C,3C…8C
V3 V4 V5 V6 V7 V8 V9 V10
+24 V


8 Channel USB DAQ Module 2
(1169)
IO1 IO2 IO3 IO4 IO5 IO6 IO7 IO8 USB-GND
12-GND
+12V
1000 µF
0.1 uF capacitor
needs to be mounted
by drilling a hole on
Board 1232 itself.
1000 uF capacitor
can be located away.
0.1 µF
1 2 3 4 5 6 7 8 GND +12V
Relay Board – 2
(1232)
NO1 NO2 NO3 NO4 NO5 NO6 NO7 NO8 1C,2C,3C...8C
V11 V12 V13 V14 V15 V16 V17 V18
+24 V

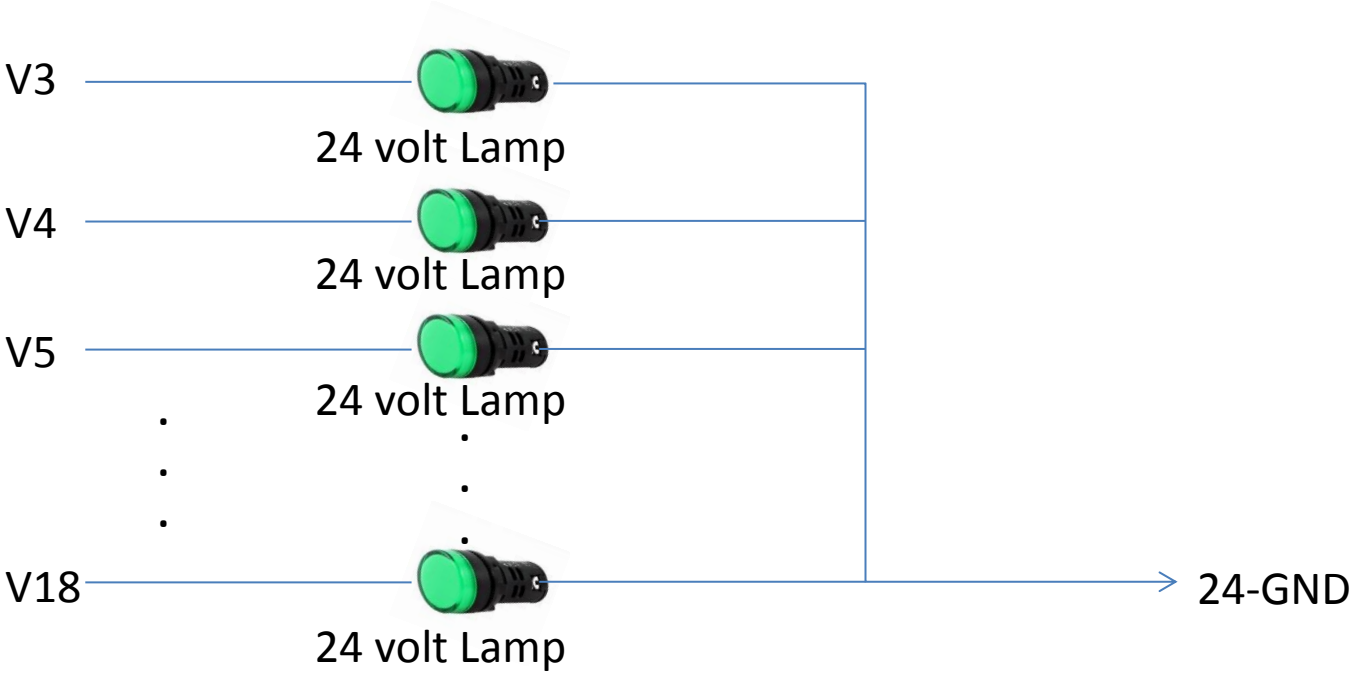

Un-Isolated AC
24Volt , 10 Ampere
Industrial Power Supply
+24 V
24-GND
Isolated AC
12Volt , 1 Ampere
Industrial Power Supply
+12 V
12-GND
COMMON
(Valve 3 to 18)
Un-Isolated AC (Input for panel)
3 core
Isolated AC (Input for panel)
3 core

Converting 4-20 mA
TO
0- 5 Volt Analog Signal

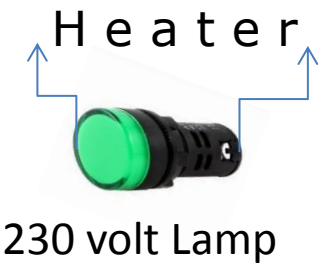


220 Ω resistor needs to be precision type i.e.
Tolerance = 1% or lesser

Indication Lamps



The labels on the lamps need to be according to the input signal for example,
"Valve 3" for V3,
"Heater" for Heater, etc.
Total 16 nos. of 24 volt lamps, and 3 nos. of 230 volt lamps



230 volt Lamp

230 volt Lamp

230 volt Lamp