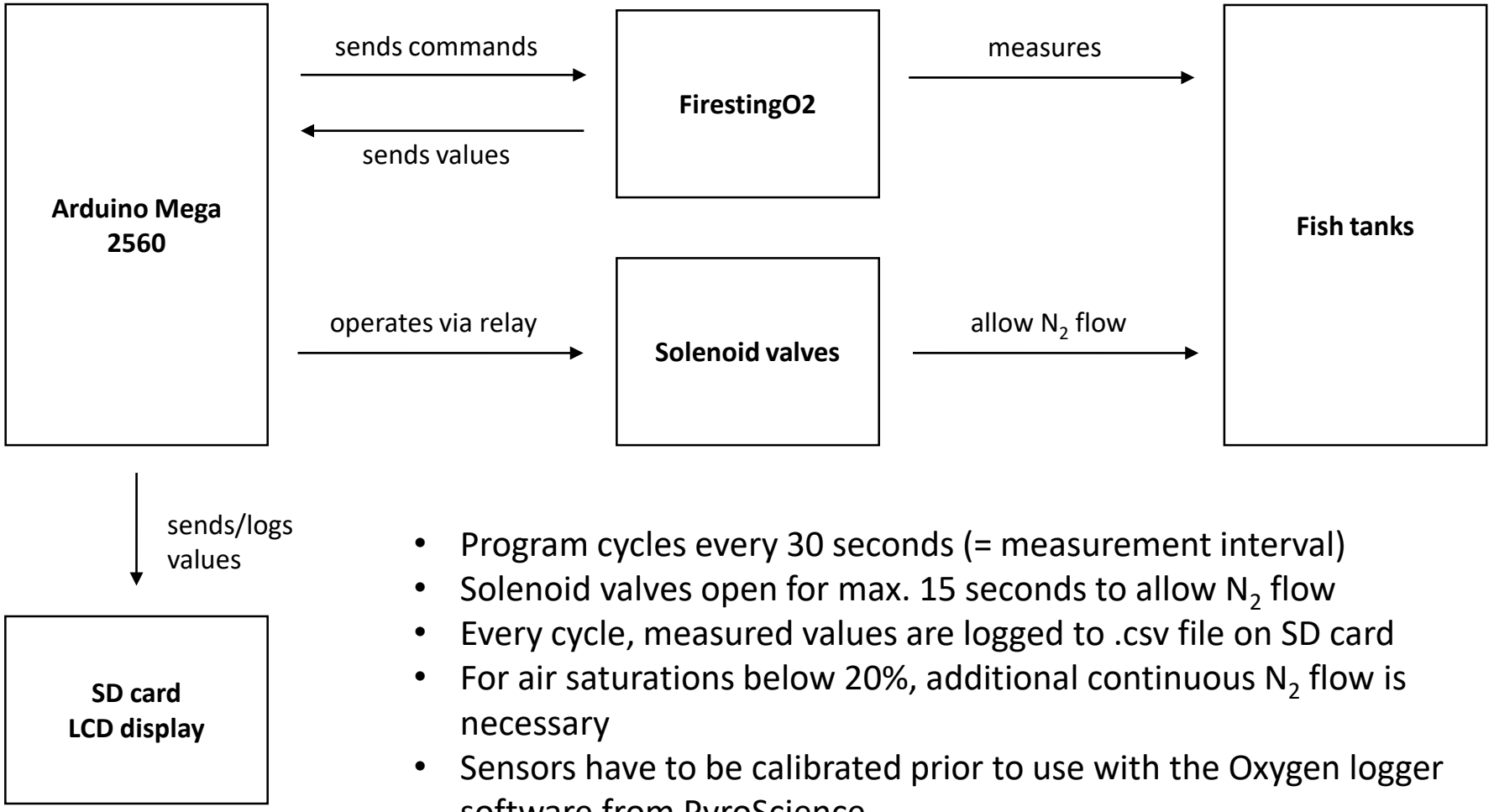
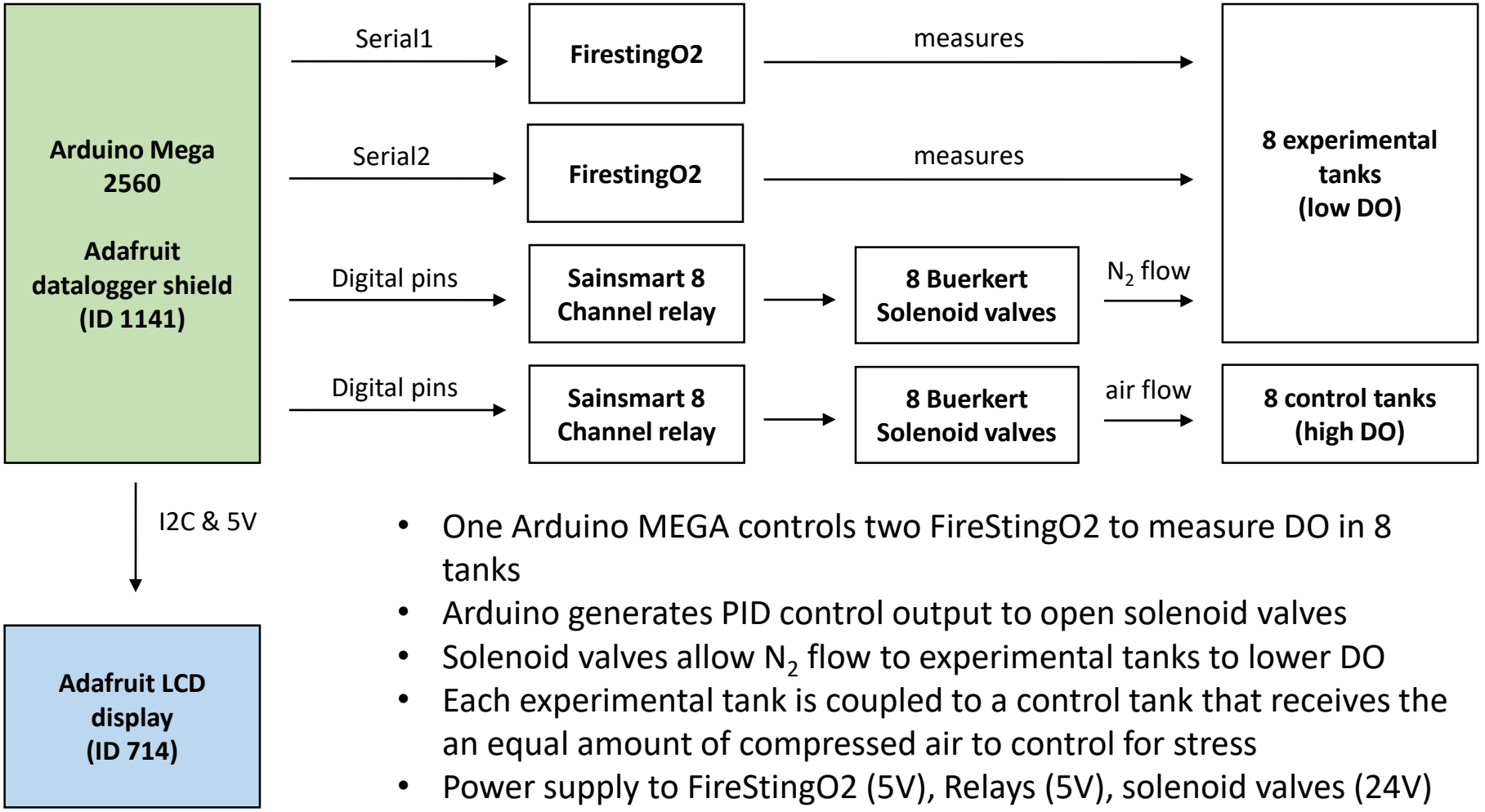
Basic principle



- Program cycles every 30 seconds (= measurement interval)
- Solenoid valves open for max. 15 seconds to allow N_2 flow
- Every cycle, measured values are logged to .csv file on SD card
- For air saturations below 20%, additional continuous N_2 flow is necessary
- Sensors have to be calibrated prior to use with the Oxygen logger software from PyroScience

Basic hardware setup



- One Arduino MEGA controls two FireStingO2 to measure DO in 8 tanks
- Arduino generates PID control output to open solenoid valves
- Solenoid valves allow N_2 flow to experimental tanks to lower DO
- Each experimental tank is coupled to a control tank that receives the an equal amount of compressed air to control for stress
- Power supply to FireStingO2 (5V), Relays (5V), solenoid valves (24V) and Arduino (9V) from separate power adapters

Sensor wiring