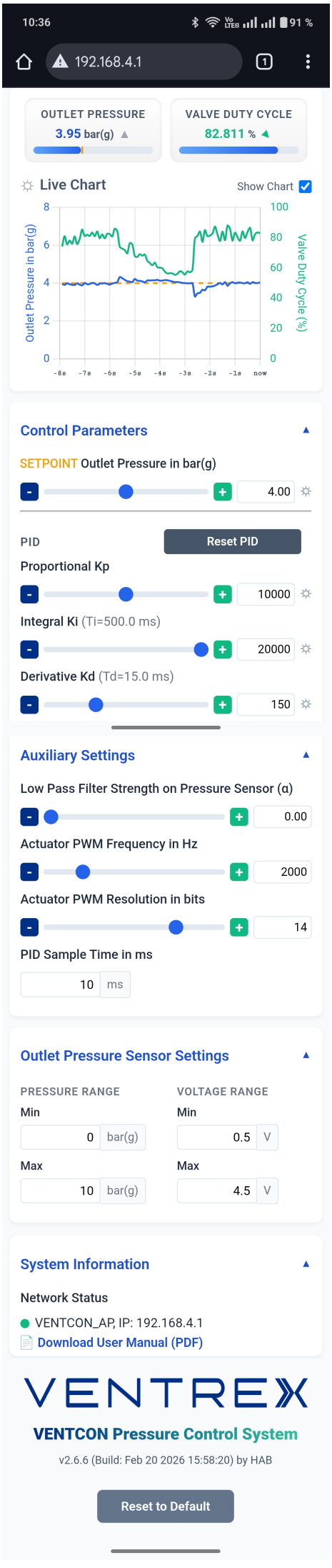


Browser Address Bar.
IP Address of the Browser App. Alternatively, use http://ventcon.local
The PID control algorithm is working regardless of WiFi connection.

Real-Time Status Indicators.
OUTLET PRESSURE:
The regulated pressure as measured by the sensor. This is the Process Variable that the PID control algorithm is working to get close to the Setpoint pressure.

VALVE DUTY CYCLE:
Measure of electrical current and regulator orifice area. This represents the output signal sent from the PID control algorithm to the regulator valve.

Live Trend Chart.
The gear icon (☼) opens a window to set the chart limits and grid settings.
The 'Show Chart' checkbox disables the chart (use when WiFi is poor)

The blue line tracks OUTLET PRESSURE over time. An OUTLET PRESSURE randomly hovering just above 0 bar(g) indicates a not working or not connected sensor.

The green line tracks VALVE DUTY CYCLE over time.

The orange line tracks the SETPOINT pressure over time. This represents the target pressure for the regulator algorithm and can be set during operation in the Control Parameters.

Control Parameters.
The essential PID control parameters are located here. Each parameter's value is adjusted by either Plus (+) or Minus (-) button, a slider or numerical input.
The gear icon (☼) opens a window to set the slider limits and fidelity.

SETPOINT Outlet Pressure:
This is the target pressure for the PID algorithm.

Kp, Ki, Kd:
These are the weights put on the proportional, integral and derivative path:

Proportional Gain (Kp): Determines the immediate reaction to the current error, applying a correction proportional to how far the Outlet Pressure is from the Setpoint pressure.

Integral Gain (Ki): Addresses past errors by gradually increasing the valve's response over time to eliminate any lingering offset between the Outlet Pressure and the Setpoint pressure.

Derivative Gain (Kd): Anticipates future errors by responding to the rate at which the Outlet Pressure is changing.

Reset PID — This button resets the PID controller's internal state. Useful when the system is saturated or is oscillating.

Auxiliary Settings.

Low Pass Filter Strength on Pressure Sensor:
If the sensor is noisy (i.e. OUTLET PRESSURE), a low pass filter can be configured here. Valid value range: 0 to 1.

Actuator PWM Frequency:
This setting determines the rate at which the valve's control signal cycles on and off to achieve the desired VALVE DUTY CYCLE. Valid value range: 100 to 10000 Hz.

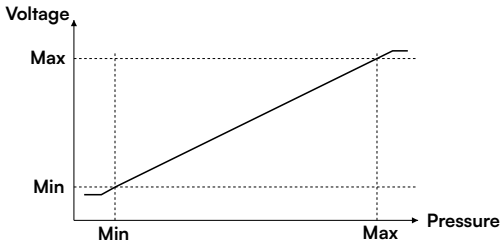
Actuator PWM Resolution:
This defines the precision of VALVE DUTY CYCLE.
Valid value range: 8 to 16 bits (e.g., 14 bits provides 16384 discrete steps).

PID Sample Time:
Defines the time interval between successive calculation steps of the PID algorithm.

Outlet Pressure Sensor Settings.

Voltage Range and Pressure Range.

The upper and lower limits define the operational boundaries of the sensor, as specified in the sensor datasheet or determined through calibration.



System Information.
Network Status: The Indicator will be green when connected, red when disconnected.
Also, this user manual can be downloaded from here.

Reset to Default.
Upon confirmation, this button restores all user-adjustable settings on the Browser App to their default values.