

Thank you for using Analyst Inside!

This document contains useful application notes related to the system. We will continue to add to this from time to time. If you cannot find what you are looking for, please contact our technical support at <insert support email address here>

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### **AI-001 Re-Baseline when Machine State logic is changed**

We strongly recommend to “Relearn” baseline data anytime PLC Machine State logic is changed. This will avoid a situation where the Analyst Inside could have data from two different machine states, but believes it is only from one.

Example:

Analyst Inside is configured as:

State 2 = Forward

State 3 = Reverse

However, the state logic in the PLC is really configured as:

State 3 = Forward

State 4 = Reverse

Therefore, Analyst Inside never sees State 2. It will log State 3 data (which it thinks is the Reverse state but is really the Forward state).

Depending upon how the user corrects the error will have impact on the validity of the data that has already been stored for State 3.

Scenario 1: User changes configuration in Analyst Inside to match the logic in the PLC.

User changes Analyst Inside configuration to match:

State 3 = Forward

State 4 = Reverse

Analyst Inside can safely continue to add to the database for State 3. In this case, previously stored data can continue to be used (although the State will now be correctly indicated as Forward). State 4 will also now be seen and data will begin to be stored when in this state.

Scenario 2: User changes PLC logic to match what was configured in Analyst Inside.

State 2 = Forward

State 3 = Reverse

In this case, State 3 will now contain a mix of Forward (which was previously stored) and Reverse (which is now being stored after correcting PLC logic). This will result in erroneous operation.

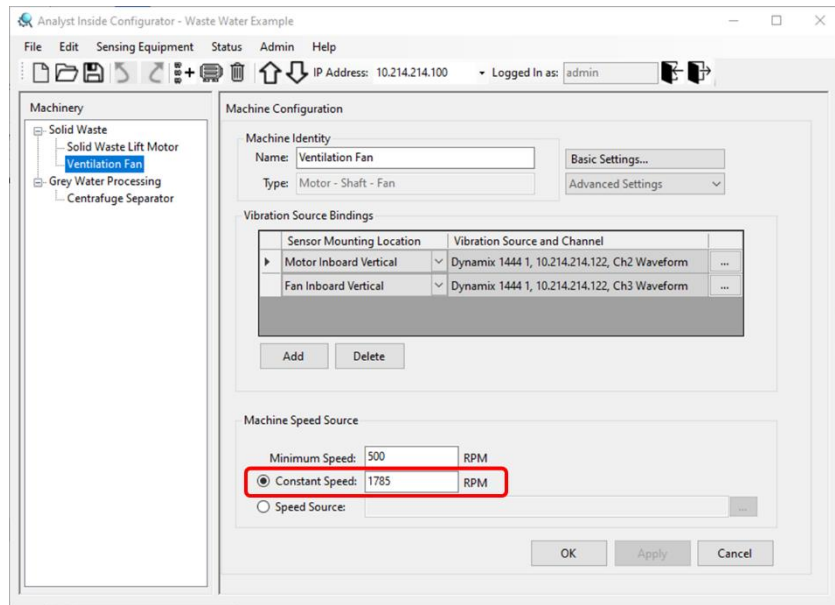
It will be impossible for the Analyst Inside to know this has occurred. In this case, the recommended action is to use the “Relearn” function from the Analyst Inside Web App Machines page to relearn the baseline data for this machine.

Machines				
Machine/Sensor	Status	Overall Machine Status		
▶ Solid Waste Lift Motor (Paused)	Monitoring	Urgent_4	Resume	Relearn
▶ Centrifuge Separator (Paused)	Monitoring	Pre-Alert - 1	Resume	Relearn
▶ Ventilation Fan (Paused)	Learning	OK	Resume	Relearn

## AI-002 When Using Constant Speed Mode, Make Sure Machine is Running Steady State Before Beginning to Baseline

Analyst Inside needs a speed reference to operate properly. If the machine speed is specified as Constant Speed (as opposed to a dynamic Speed Source), then care must be taken to ensure that a Baseline is created when the machine is running steady state at the Constant Speed indicated. Analyst Inside requires 100 samples, or 25 hours, to create a baseline. If the machine is NOT running at the Constant Speed indicated over the 25 hours (for example, it is idle or ramping up and ramping down), Analyst Inside will not create a valid baseline that reflects the normal operating vibration signature of the machine.

The following is recommended when using Constant Speed.



- 1) Immediately after downloading the Configuration to Analyst Inside, PAUSE machine monitoring

Machines				
Machine/Sensor	Status	Overall Machine Status		
▶ Solid Waste Lift Motor (Paused)	Monitoring	Urgent_4	Resume	Relearn
▶ Centrifuge Separator (Paused)	Monitoring	Pre-Alert_1	Resume	Relearn
▶ Ventilation Fan State: - Speed: 1785 RPM	Learning	OK	Pause	Relearn

- 2) Bring the machine being monitored up to the Constant Speed
- 3) Press Resume machine monitoring and then press Relearn. Analyst Inside will now begin to create a baseline of the machine's vibration signature

Machines				
Machine/Sensor	Status	Overall Machine Status		
▶ Solid Waste Lift Motor (Paused)	Monitoring	Urgent_4	Resume	Relearn
▶ Centrafuge Separator (Paused)	Monitoring	Pre-Alert - 1	Resume	Relearn
▶ Ventilation Fan (Paused)	Learning	OK	Resume	Relearn

- 4) Let the machine run for 25 hours or until the machine status changes to Monitoring. If the machine will not be running for 25 hours straight, then press Pause before the machine is shut down. Press Resume again only after the machine has reached the Constant Speed again. Repeat this as necessary until the machine status changes to Monitoring

## AI-003 Next Application Note