PBS Software Version 3.1.0 Release Notes

Improvements:

- The method used to generate Process Data reports has been optimized. It is now faster, and uses less memory, than the previous method. This means the limitations to Process Data reports as of PBS Software version 3.0.9 have been relaxed (see below).
- Due to the improvements to speed and memory usage for generating Process Data reports (see above), the limitations on generating Process Data reports have been updated. Note that limitations on generating other report types are the same as in 3.0.9. The updated limitations for generating Process Data reports are as follows:
    - Estimated completion time – If the software estimates that it would take longer than 5 minutes to generate a report, given the number of records in the time span/batch being requested, that report will be prevented from being generated. The limit is 1.6 million records (the limit may be higher, depending on CPU speed).
    - Actual elapsed time – If more than 5 minutes elapses while a report is being generated, then the report generation will be halted.
    - Actual memory consumption – If the available physical memory falls below 10 MB while a Process Data report is being generated, then the report generation will be halted.

New Features:

- When generating Process Data reports from the Desktop UI, a new progress bar will be visible to users. It will show the remaining time, the elapsed progress as a percentage, and the current generation state.
- pH Sample Averaging: the internal variable controlling number of samples used to calculate a moving average of the pH signal has been converted into a user-configurable setting located in System Variables.
    - New System Variable: pH -> Samples To Average (Default: 10)
        - This default reflects the hardcoded value used in previous versions of PBS Software and results in no change in functionality to pH measurement.
    - New Global Variable: pHSensorSamplesToAverage
    - This variable controls the number of samples used to calculate a linear moving average of the pH signal. The pH sensor signal is sampled once per second, meaning a value of 10 Samples To Average results in the last 10 seconds of signal being averaged.
    - Note that the averaging does not apply to the Desktop UI or Hello UI's calibration menu, as these use the underlying raw value to calibrate the sensor.
    - Note that the value is coerced to between 1 and 3600 samples, and changing the value resets all data used to calculate the average. This means pH may fluctuate more rapidly than expected when the setting is first changed and until a full set of data is re-collected (e.g. 10 samples if using 10 Samples To Average).

User Manual Updates:

- The following System Variable has been introduced, and will be included in the "pH" group of Appendix 1 in the user manuals, after the "Valid Low" setting:

Setting Name	Default Value	Definition	User May Change	Corresponding Global Variable
Samples To Averarge	10.000	The number of samples used to calculate a moving average of the pH signal. pH is sampled once per second, meaning a value of 10 Samples To Average corresponds to 10 seconds of data. Note: The corresponding global variable for this value is coerced between 1 and 3600 samples (inclusive). Note: Sampling data is reset when this setting is changed. Allow one second per sample (e.g. 10 seconds for 10 Samples To Average) for the setting to fully take effect. Note: This setting does not apply to data displayed in the Desktop UI's or Hello UI's calibration menu.	!	pHSensorSamplesToAverage

- The following Global Variable has been introduced, and will be included in the "pH" group of Appendix 4 in the user manuals, after the "pHSP" global:

Variable Name	Default Deadband	Default Record	Source	Definition
pHSensorSamplesToAverage	0.5	False	System	See pH "Samples To Average" setting in Appendix 1.

Bug Fixes:

- This release does not include any bug fixes.