

Technical Note

SPM Flex Software Package

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1.04 Release Notes

Honeywell Analytics is pleased to announce the release of SPM Flex software package 1.04, which introduces support for Duty Cycle and K-Factor functions, as well as addressing a few other issues.

Duty Cycle – For applications where gas is typically present, the duty cycle option has been added to reduce tape consumption. This user configurable option will hold advancing the tape until the duty cycle time has been exceeded.

K-Factor – This user configurable function allows the user to enable a multiplication factor on the gas readings and detection range to allow for use with custom dilution systems or user defined cross sensitive gas applications.

Contact your Honeywell Analytics service representative for more information on whether your system(s) are compatible, and how to upgrade.

Software Change Summary:

- Added a user-configurable scale factor (K-Factor) to adjust the concentration readings when used with a dilution system or cross sensitivity.
- Added a user-configurable Duty-Cycle option with Remote Trigger override.
- Implemented a user configurable option to disable stale tape maintenance fault.
- Resolved a defect related to User configured LDL.
- Improved how gas concentration is displayed on local interface so that bigger numbers fit the screen.
- Resolved a few minor defects.

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Detailed Description:

1. With the user-configurable scale factor (K-Factor), Gas Concentration, Alarm Limits, User 4-20 Full Scale, User LDL, and TWA readings are automatically adjusted based on the scale factor. K-Factor can be set in the range 0.5 to 10.0.
 - K-Factor will also have an Enable/Disable setting with the default being disabled.
 - K-Factor is automatically defaulted when new tape is loaded or another gas is selected. K-Factor settings are retained when new tape is of the same family and same gas is selected.
 - If K-Factor is enabled, the local user interface (LUI) allows the user to enter an alternate gas name for display on the user interface. This alternate gas name has a limit of 8 characters and default to blank (which uses the name from the lookup table). K-Factor parameters are backed-up in non-volatile memory (NVM). K-Factor is displayed on the main monitoring screen.
2. The Duty Cycle option provides the ability to set the minimum time between subsequent tape advances. The Duty Cycle Period is settable between 0 (disabled) and 17 minutes in 1 minute increments. The default value of the Duty Cycle Period is zero.
 - If the stain is saturated prior to the end of the duty cycle period, monitoring is suspended until the duty cycle expires. When monitoring is suspended, the user interface (UI) indicates that the unit is not currently monitoring and how much time remains until monitoring will be resumed. While monitoring is suspended, the 4-20 mA reports the most recent concentration reading.
 - The unit provides the ability to override the duty cycle function and advance the tape and resume monitoring immediately (Remote Trigger) which can be activated through the Web page and MODBUS/TCP.
 - In monitoring mode, when tape is not saturated, UI shows "In Monitor" and "Duty Cycle On" and Remote Trigger request is ignored. In monitoring mode, when tape is saturated, UI shows Stopwatch Icon and the Countdown Counter that indicates remaining time in seconds and Remote Trigger request is accepted and results in tape advance.
3. Out-Of-Bag (Stale) Expiration Option can be set to "stale fault is enabled" or "stale fault is disabled" from the UI when unit is not in monitoring mode. The default setting for the Stale Expiration is "stale fault is enabled".
 - When tape is expired In-Bag, instrument fault is issued and entering into monitoring mode is not allowed. Note that monitoring mode is not aborted if tape becomes expired in monitoring.
 - When tape is expired Out-Of-Bag and Stale Fault is disabled, no fault is issued. When tape is expired Out-Of-Bag and Stale Fault is enabled, maintenance fault is issued, entering into monitoring mode is allowed, and monitoring mode is not aborted if tape becomes expired in monitoring. A warning text message is displayed on UI when tape is beyond the expiration date at power up or at tape load/change.

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4. The software has been modified to use LDL from the user settings when user selectable LDL is enabled, otherwise it is taken from gas table.
5. The main screen (LUI & Web) allows for 6 characters. Without K-Factor, almost all gasses have 4 significant digits or less. However, with the introduction of K-Factor, the numbers may become bigger. The new rules of displaying of big numbers include right-justification of concentration values and reduction of decimal places when necessary.
6. The following minor defects have been addressed:
 - Optics Auto Adjust may incorrectly fail when ambient light level is high -- Removed subtraction of dark readings from the light readings in the Optics Auto Adjust function.
 - Early tape advance condition change in SPM Flex -- Added a check for the peak to be over low-counts-to-action in the decay function to avoid early tape advance and thus to reduce tape consumption in high humidity environment.
 - Last state of power up option is not available in monitor mode -- Corrected variables in the commands for “power-off” and “get power-off status”.
 - 4-20 mA Output Improvements
 - Incorrect 4-20 mA output when in certain situations when unit is in a fault -- Moved the boundary check for the full scale down to the place where 4-20 is set as per gas.
 - 4-20 output does not drop to 1.0 mA in monitor mode when alarm latched -- Modified 4-20 prioritization logic to check gas concentration against alarm settings.
 - Over-range level of 21 mA is reported on 4-20 mA output in A2 simulation -- Replaced single rounded up check for gas over user FS with two checks.

Unresolved / known issues in current release:

-- "115 Comm. Failure GD" was generated under stale CC fault condition. This is a nuisance fault when stale tape is not present when unit automatically goes in monitoring mode at power up.

-- Fault message did not disappear on the web page after reset. This is a nuisance fault message on web page that cannot be cleared up by “reset” operation.

-- Display does not turn off when time to dim is set the same as time to off.

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