

CLARIFICATION OF HYPERLOGGER / MODULOGGER INPUT FILTERING ENHANCEMENT

Overview:

It has been noted that input signal reading errors can result from certain configurations of filtered and unfiltered analog input sampling sequences. The magnitude of the error will vary depending on many variables (gain, delta-V between channels, filtering level selected) and range from nearly undetectable to potentially millivolts of error.

The error is due to insufficient input stage filter settling time being allowed under certain data acquisition conditions.

Hardware, firmware and HyperWare changes were implemented to eliminate this potential error.

Impacted Product:

HyperLogger (HL-1, HLP-10), ModuLogger (ML-1) and ModuLogger Mini (MNL-1) manufactured prior to February 23, 2005 (SN 05022200 and earlier) which utilizes MLAD, xLIM-1, xLIM-7 or xLIM-4 analog Interface Modules.

Reading Error Conditions:

The error can manifest itself as an out-of-spec measurement error on the first non-filter-enabled analog input channel read after one or more filter-enabled analog input channels are read.

Errors do NOT exist in the following situations:

No Filtering¹ is enabled for any channels

The same Filtering level is enabled for ALL analog input channels

Corrective Action:

Two ECO's were implemented to correct the problem. Change details include:

Hardware Modifications: Changes were made within the logger PCA's to allow the firmware to 'reset' the filtering as well as identify that this hardware modification had been performed.

Firmware: Version 4.68 incorporates changes to correct the filtering induced errors by resetting the filter between readings on loggers modified with hardware changes defined by this ECO OR by extending the filter settling time on loggers NOT modified with hardware changes.

HyperWare: Version 4.77 eliminates the 'Medium' Filter Setting within analog input channel Configuration Dialogs as this was deemed unnecessary and facilitated hardware changes.

Conclusion:

Units equipped with the latest firmware, HyperWare and hardware modifications will see improved accuracy on readings under the above-mentioned conditions with negligible speed performance impact. Units equipped with Firmware V4.68 or later and without the hardware modifications will see improved accuracy but will execute Program Nets slightly more slowly due to additional settling time that will be inserted.

HyperWare V4.77 will run with pre-V4.68 Firmware but the above filtering issue will not be rectified.

¹ Filtering refers to the Low, Medium, High Filter Setting, NOT the 50/60 Hz AC Noise Reject setting