Product: 2018-LED

Release Date: February 05, 2009

Scope: This bulletin applies only to the LED version of the 2018.

Issue: **WDT Error on Monitor Power Up**

Symptom: When configured for 2010 mode of operation and powering up, the monitor may detect a WDT Error if the Watchdog input did not change states five times in the first four seconds.

Root Cause: The monitor incorrectly used the minimum start time of four seconds instead of the maximum start time of ten seconds for validating the Watchdog input.

Operational Issues: The monitor may trip to the fault condition when powering up in the 2010 mode. This issue has only been reported with one particular special version of 2070 firmware. This was usually a consistent WDT Error on power up.

Corrective Action: Upgrade to Firmware version 01.05.00 or greater.

Issue: **Yellow Fault Display for Channels 17 and 18**

Symptom: When in the fault condition with a Short Clearance fault, the monitor may display incorrect information on the Channel 17 and Channel 18 Green LEDs.

Root Cause: The monitor display routine for the Short Clearance fault would repeat the Channel 1 and Channel 2 fault status as Channel 17 and Channel 18, respectively.

Operational Issues: Incorrect fault display when a Short Clearance fault involved Channels 1, 2, 17, or 18. The fault logs (Prior Faults and Signal Sequence) have the fault recorded correctly. Using the RaeComM software to view the logs will provide the correct fault information. This issue only affected the display of the fault. **This issue did not affect any fault monitoring so this issue will not cause an actual fault to be missed.**

Corrective Action: Upgrade to Firmware version 01.05.00 or greater.

Issue:	**Conflict Fault Display for Flashing Don't Walk vs Yellow**
Symptom:	When in the fault condition with a Conflict fault and the source of the conflict was a Flashing Don't Walk conflicting with a Yellow, the monitor will not include the Red of the Flashing Don't Walk channel in the fault display.
Root Cause:	The monitor display routine for the Conflict fault did not include channel Reds when a Yellow was involved in the conflict and Flashing Don't Walk monitoring was enabled.
Operational Issues:	Incorrect fault display when a Conflict fault involved a Flashing Don't Walk and a Yellow. The Yellow will be identified as part of the fault, but the other half will not be identified. This issue only affected the display of the fault. **This issue did not affect any fault monitoring so this issue will not cause an actual fault to be missed.**
Corrective Action:	Upgrade to Firmware version 01.05.00 or greater.

Feature:	**Added Factory Option for Fast Start Up**
Purpose:	Several agencies had requested a faster start up time for the monitor. The monitor currently ensures that there is a minimum flash time of at least four seconds. When this factory option is enabled, the monitor will reduce the minimum flash time to about 800 milliseconds.
User Interface:	This is a factory option and cannot be readily changed by the user. Any new monitors should be ordered with this option if it is desired. If it is desirable to turn on the option after upgrading a monitor, contact Reno A&E Tech Support for guidance in enabling this option.
	The faster start up feature can also be temporarily enabled by holding down the front panel RESET switch while powering up or plugging in the monitor.
Interactions:	None
Implemented:	Firmware version 01.05.00

Feature:	**Flashing Yellow Arrow Protected / Permissive Left Turns**
Purpose:	Many agencies now want to use the Flashing Yellow Arrow (FYA) as defined by NCHRP Project 3-54. This left turn display requires special monitoring functions of the monitor to correctly and totally monitor this display.

User Interface: The circuit board OPTIONS DIP switch position 2, labeled **CO-CHAN** has been assigned the function of **FYA Enable (FYA EN).** Two new Software Options, accessible through RaeComM, called "FYA Ignore Yel Conflict" and "FYA Uses Yel Driver" have been added.

When FYA Enable is ON, the "FYA Settings", accessible through RaeComM, are used to modify the Conflict, Dual Indication, and Red Fail test as described below.

When FYA Ignore YEL Conflict is ON and FYA Enable is ON, the monitor will ignore yellow to yellow conflicts between the parent FYA channel and any conflicting child channel when the yellow of the parent FYA channel is terminating a flashing yellow arrow.

When FYA Driver is YEL is ON, the monitor will expect the flashing yellow arrow display to be driven by a yellow output. When this feature is OFF, the monitor will expect the FYA display to be driven by a green output.

When "FYA Settings" are modified through RaeComM, the software will determine if the child is permissive or conflicting with the parent channel based on the current program card. If permissive, the child will have a green border or a yellow border based on the setting of "FYA Uses Yel Driver". If conflicting, the child will have a red border. The permissive channel's appropriate display (green or yellow) will be included in the RED FAIL and the DUAL INDICATION tests for the parent channel. A permissive child channel must have its clearance period timed on the parent channel's yellow and a child's display must flash or the monitor will create a conflict with the conflicting child channel. The conflicting child channels will have a YEL to YEL conflict ignored with the parent channel if that option is ON and the yellow is terminating a flashing yellow arrow.

EXAMPLE: If channel 1 will have a FYA display driven by the channel 9 green and the yellow of channel 1 will be ON at the same time as the yellow of channel 2 to terminate a flashing yellow arrow, the configuration would be: FYA Enable should be ON, Channel 1 will have childs of channel 2 and channel 9, "FYA Uses Yel Driver" should be OFF, and "FYA Ignore Yel Conflict" should be ON.

Interactions: The Co-Channel feature has been removed. If this feature is required, do not upgrade any higher than firmware 01.03.03.

Conflict, Dual Indication, and Read Fail tests are modified as described above. See the 2018 Operation Manual for firmware 1.5.0 for more details on these interactions.

Implemented: Firmware version 01.05.00

Feature: **Event Based Signal Sequence Log**

Purpose: The monitor has always had the ability to record the Signal Sequence log in the event mode. This meant that it checked all of the inputs (AC & DC) every 33 milliseconds for changes in states to determine if another event needed to be added to the log. The down side to this with 2070 controllers is that the Watchdog input normally changes state every 50 milliseconds. Therefore the amount of time recorded in the event mode did not significantly increase due to Watchdog input events. To improve recording time, the Watchdog input is no longer included in the inputs checked for state changes every 33 milliseconds when the Signal Sequence log is recording in the event mode.

User Interface: None. This is a change to the way that the Signal Sequence log records when in the event mode.

Interactions: None

Implemented: Firmware version 01.05.00