20 Jun 2021

SmokeSight 10

Product Bulletin No.3

SmokeSight – Battery consumption, alert reporting, alert silencing

A new release of option card software is now available. The release incorporates new features and bug fixes.

New features include:

- An active alert reported by corresponding white LED flashes/beeps is reported every 5mins rather than 1min

- A request to report active alerts can be made by tapping the Test+Hush button at any time

- Tapping the Test+Hush button will silence alerts for 8 hours. Subsequent taps during the silence period restarts the silence period timer

- The silence period will remain in place until its timer elapses. It will not clear if the alert condition that created the alert clears. This will prevent ongoing disturbance from intermittent alerts

- New Installation & Operation Manuals available from smokesight.com – new feature details and corrections

Bug fix includes:

Symptoms

- Option card low battery warning (1 white LED/flash) after approximately 3 months operation rather than the expected 5 years, or

- Unresponsive option card identified by no white LED flash/beeps following Test+Hush button presses, subsequently remaining wireless interconnected alarms reporting radio interlink network loss (2 or 3 white LED/flash)

Units affected

Only units that meet all of the following conditions are affected:

- Part#SS10MAMA or SS10LNAN, and

- Date of Manufacture DOM: 06-2020-01, and

- Shipped prior to 21 Jun 2021

Safety Exposure

Whilst not a new exposure, if low battery and radio interlink network loss alerts are ignored, the affected smoke alarm will not sound when signalled by a remote wireless alarm event

Problem

- Option card software bug causing unnecessary battery consumption, and

- Option card low battery warning threshold, too low

<u>Customer Action</u>

Either:

- Remove the affected SmokeSight alarms, remove the batteries, place in a dust free plastic bag, box up and return to Redbusbar for reprogramming. Redbusbar will cover the costs of freight from your local post office. The ceiling mounted base can remain installed. Note that reprogramming will erase the network configuration and AutoTest times.

- Arrange with Redbusbar a suitable time to visit the installation to reprogram the affected SmokeSight alarms. Allow for a 2hr visit.

Should the symptoms be observed prior to reprogramming, remove the SmokeSight alarm, remove the batteries, wait 30 seconds, insert new batteries and reinstall the SmokeSight alarm. If the alarm remains unpowered for an extended period, expect radio interlink loss alerts (white LED flash/beeps) on remaining powered alarms. After the new batteries are installed the network will self heal and the alert beeps will self clear.

Normal warranty will be unaffected.

<u>Detail</u>

In mid June 2021 a SmokeSight SS10LNAN in a Redbusbar employee's house started reporting an option card low battery warning. Just prior to going to bed, and after 8 hours of low battery warning, alert silence was requested by a tap of the Test+Hush button. The alarm became unresponsive at this point. The unresponsive alarm was evidenced by the remaining wireless interlinked alarms reporting a radio interlink loss over the subsequent 30 minutes. Similarly, an alert silence was requested on these remaining alarms.

Approximately 1 hour later the remaining SS10LNAN appeared to ignore the previous silence request and started to report the radio interlink loss, again. The remaining SS10MAMA silenced alarm, remained silenced for the full 8 hours.

Inspection of all SS10LNAN alarms revealed heavily depleted option card batteries. Inspection of the SS10MAMA alarm revealed healthy option card backup batteries. Note that the SS10MAMA alarm only uses its option card backup batteries during mains loss.

SmokeSight alarms employ several software configurable, battery conservation facilities. Most of the time the SmokeSight controller is sleeping. The SmokeSight controller wakes up for a fraction of a second every few seconds to perform several status checks and listen for smoke alarm events. The act of flashing the white LED/beeping substantially loads the option card batteries even more so than wireless network operations.

Investigations revealed that the act of silencing the first SS10LNAN alarm caused the option card to shut down as the voltage supplied to its controller when activating the white LED/beeps, was below a critical level. The shutdown of this alarm resulted in the radio interlink loss alert on the remaining alarms which were then silenced. Silencing of the remaining SS10LNAN alarms, also with depleted batteries, caused these alarms to shutdown as well. Silencing of the remaining SS10MAMA alarm with healthy batteries caused this alarm to remain silenced. After some time the battery voltages recovered slightly in some of the shutdown SS10LNAN alarms sufficient to cause their controllers to restart. As not all alarms recovered at the same time, active SS10LNAN alarms started reporting radio interlink loss again.

So the root cause of the above behaviours was that the low battery voltage, alarm threshold was too low. So low in fact that it gave insufficient warning before normal operations, like silencing were affected. A contributing factor was that a battery conservation setting was disabled causing ineffective sleeping and hence excess battery consumption.

It appears that these two bugs were introduced into the software during earlier network functional testing and were not subsequently detected during production testing.

A fix for the bugs has now been implemented and tested.