



Technical Service Bulletin: Charge Guard (CG-X) IGN Mode/5 SEC Time Setting

Scope: Charge Guard (CG-X) IGN Mode/5 SEC Time Setting – Ignition Trigger (Stability)

Purpose: Communication to partners, resellers, and end-users

- 1) Communicate Havis' response to customer reports (CG-X IGN mode – Ignition Trigger)
- 2) Communicate Havis' commitment to customer service, and recommended solution.

Bulletin: Summary Description: Investigation Results, Findings

Quality Commitment: Customer Support and Recommended Solution

SUMMARY: Havis has received reports from end-users and installers that the Charge Guard (CG-X) times out and resets (cycles on and off) during use while in IGN mode with the Time Setting switches set for 5 SEC (all Time Setting switches ON).

Further testing has confirmed this complaint and identified a potential interruption of CG-X output due to an interruption/momentary loss of ignition signal at the IGN terminal of the CG-X product. When the ignition source connected to the IGN terminal is interrupted, or drops below 2/3 of battery voltage, the CG-X detects a loss of IGN input and begins a 5 second monitoring/time out phase. As a result, the CG-X will momentarily de-energize the output relay and the system will experience a loss of voltage at the OUT terminal.

Engineering investigation and analysis has revealed the IGN Mode/5 SEC configuration is a limitation of control strategies triggered by the unstable vehicle ignition source. For vehicles with confirmed issues: the unstable ignition source(s) have been determined to be caused by wiring issues, electronic (digital) ignition signals which are not true switched ignition sources, and/or vehicle electrical system issues.

Additional engineering assessments have certified that no other modes of operation or timing settings are affected under similar circumstances (DC and AC modes recover instantly with no loss of voltage at the OUT terminal; Time Setting selections between 15 Minutes to 18 Hours recover with no interruption when the ignition source is restored at the IGN terminal).

AFFECTED UNITS: Most end-users will not be affected. For affected users with product installed using IGN Mode and the 5 SEC Time Setting: Investigate the cause of the unstable ignition source. If the vehicle is equipped with a factory wired, module controlled 12V Digital (Electronic) Ignition Source: change the Time Setting to 15 MIN (this removes the anomalous time out).

IMPACT: The Charge Guard (CG-X) remains fully functional for all modes and time settings with the exception of the previously stated condition.

CONTAINMENT/RESOLUTION: Havis is investigating changes to the monitoring function of the control strategy mechanisms to differentiate between (a) ignition source switched "OFF" status and (b) ignition source stability issues. Havis will change the default settings (from the factory) to 15Mins instead of 5Secs to reduce the likelihood of Out of Box failures due to unstable IGN source. As well, Havis emphasizes the importance of ignition source stability when choosing the 5 SEC Time Setting option.