WILLOWGLEN SYSTEMS

Vehicle Integrity Module

As demand for safe and efficient rail systems increases worldwide so do the requirements for innovative technological solutions. Willowglen Systems is a pioneer in metro-rail technology that meets these rigorous challenges. Our latest innovation is the Vehicle Integrity Module (VIM). This hybrid controller combines a microcontroller and FPGA hardware to ensure high-reliability and maximum uptime, in addition to delivering operational and maintenance efficiencies.

The VIM communicates with on-board subsystems, and processes operator commands, safety functions, and control signals. When used in conjunction with Willowglen's thrust control lever assembly, a driver can manually operate the vehicle.

Safety Critical Functionality

The VIM was developed for customers who require the highest levels of safety and reliability. It is designed to reduce the level of risk associated with vehicle functions being assigned a safety critical designation. For safety critical functions, the VIM is aligned with the stringent SIL 4 rating based on IEC 61508-2 requirements for a hardware device. Our VIM solution is used on platforms requiring the CENELEC EN 50126/28/29 standards.

The VIM processes control functions separately from safety functions along with evaluations from the integrated diagnostics and feedback signals.

Due to the modular and programmable nature of the VIM, the unit is highly-adaptable to many different types and suppliers of on-board subsystems. Compared to traditional systems, the VIM reduces overall operational & maintenance costs by a factor of four.

Features

- SIL 4 design
- Replaceable modules can be swapped in situ
- Available with different voltage inputs
- Wide temperature operation
- Rail application connectors
- Integration of force guided safety relays for additional input/output criteria
- High-level programming of logic circuits
- LED indicators indicate the operating state and assist in trouble-shooting
- Installed in standard 19" rack
- Communicates over CANbus vehicle network
- Possibility for customized function modules to be designed