

# ThyssenKrupp SG200 Elevator Speed Governor Test System Prototype

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**Abstract:** The ThyssenKrupp SG200 elevator speed governor is designed to monitor the speed of an elevator cab, detect if a cab moves past contract speed, and bring that malfunctioning cab to a halt. In the field several of the governors tripped at speeds beneath contract speed and brought the cab to a halt, in error, trapping passengers. The purpose of this project was to build an automatically functioning test system, capable of logging many failure speeds of the SG200 device for analysis.

This was accomplished using an HC9S12 Dragonboard microprocessor, C programming, a simple 24-V motor to drive the governor, and a variable power supply. An accelerometer was mounted on the device to monitor position of the trip switch arm. The velocity and position curves were plotted with the data transferred to Matlab, providing further methods of analysis. A heat chamber was utilized to monitor the effect of temperature change on the governor.

A reliable test system was developed and shown to be consistent for multiple test benches. Heat testing showed a significant lowering of trip speeds for the SG200. The automated collection of data provided an accurate and convenient method of analysis.

**Keywords:** Elevator, Microprocessor, Programming, SG200, Test

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