Safety Controller, Asset A0010 | MITRE ATT&CK®

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Safety controllers are typically a type of field device used to perform the safety critical function. Safety controllers often support the deployment of custom programs/logic, similar to a PLC, but can also be tailored for sector specific functions/applications. The safety controllers typically utilize redundant hardware and processors to ensure they operate reliably if a component fails.

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Related Assets

Name	Sectors	Description
Safety Instrumented System (SIS) controller		SIS controllers are used to "take the process to a safe state when predetermined conditions are violated" [1] through the reading of sensor data and interaction with digital/physical control surfaces. These devices are oftentimes located on programmable embedded devices running specialized RTOS or other embedded operating systems.
Emergency Shutdown Systems (ESD) controller		Emergency Shutdown System controllers are used to read sensor values and interact with control surfaces to return the system "to a safe static condition so that any remedial action can be taken". [2]
Burner Management Systems (BMS) controller		Burner Management System controllers are used to interact with sensors and control surfaces to maintain safe operating conditions for the burner. These can include safely starting-up and managing the main flame, controlling and monitoring the burning conditions, and safely initiating planned or unplanned shutdown sequences.

Techniques

References

1. Keith Stouffer. (2015, May). Guide to Industrial Control Systems (ICS) Security. Retrieved March 28, 2018.

2. Society of International Gas Tanker & Terminal Operators Ltd. (2021). ESD Systems: Recommendations for Emergency Shutdown and Related Safety Systems (Second Edition). Retrieved September 28, 2023.
