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## Front end equipment protection system at the Advanced Photon Source

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The front end Equipment Protection System (FE-EPS) at the Advanced Photon Source is a high reliability, fail-safe single chain interlock and control system. It consists of an Allen-Bradley PLC-5/30 processor, local and remote I/O racks, monitoring and control panels, serial communication links, and field devices. Each front end (FE) is equipped with a dedicated EPS. The system monitors a variety of sensors (e.g., vacuum, cooling water, temperature, pneumatic pressure), and controls FE photon shutters and UHV valves. Main functions of the FE-EPS are to guard the integrity of the storage ring vacuum against vacuum excursions in the FE and beam transport line, as well as to protect the front-end and beamline components from being damaged by synchrotron radiation. The FE-EPS interfaces to six other APS interlock and control systems. Information about FE interlocks and devices is displayed on UNIX machines using EPICS software tool kit. The system design is presented.

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