

**IMPLEMENTATION OF A PERSONNEL SAFETY INTERLOCK
SYSTEM BASED ON REPROGRAMMABLE I/O HARDWARE.**

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The Personnel Safety Interlock (PSI) at BESSY controls the access to restricted areas inside the storage ring building and interrupts the machine operation when unallowed access occurs. The system has to prevent any damage to human beings due to machine operation and is prescribed by German law. The digital I/O hardware of the BESSY modular I/O system (used to interface the bulk of BESSY devices) includes a freely reprogrammable logic stage. This key feature provides the functionality needed to design interlock systems using solely the standard digital I/O set. In combination with the BESSY embedded controller concept and the CAN field bus this implementation fits perfectly into BESSY's field bus based control system concept and is a full alternative to a PLC based system.