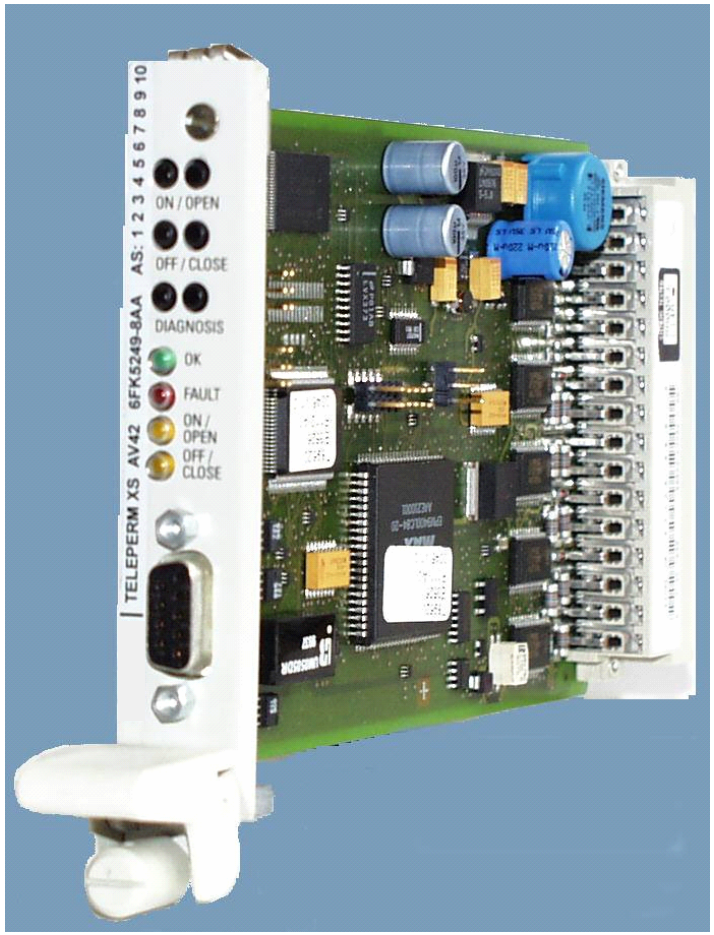
Priority and Actuation Control System (PACS) Overview

Priority Actuation and Control System: System Overview

- **Functions**
  - Prioritize actuation requests (PS, SAS, PAS)
  - Essential Component protection (Torque, Limit Checking)
  - Drive actuation
  - Drive monitoring
  - MCR/RSS selection
- **Architecture**
  - One module for each actuator controlled
  - Used for safety related actuators
  - Modules located in separate cabinets from other systems
  - AV42 TXS module is utilized

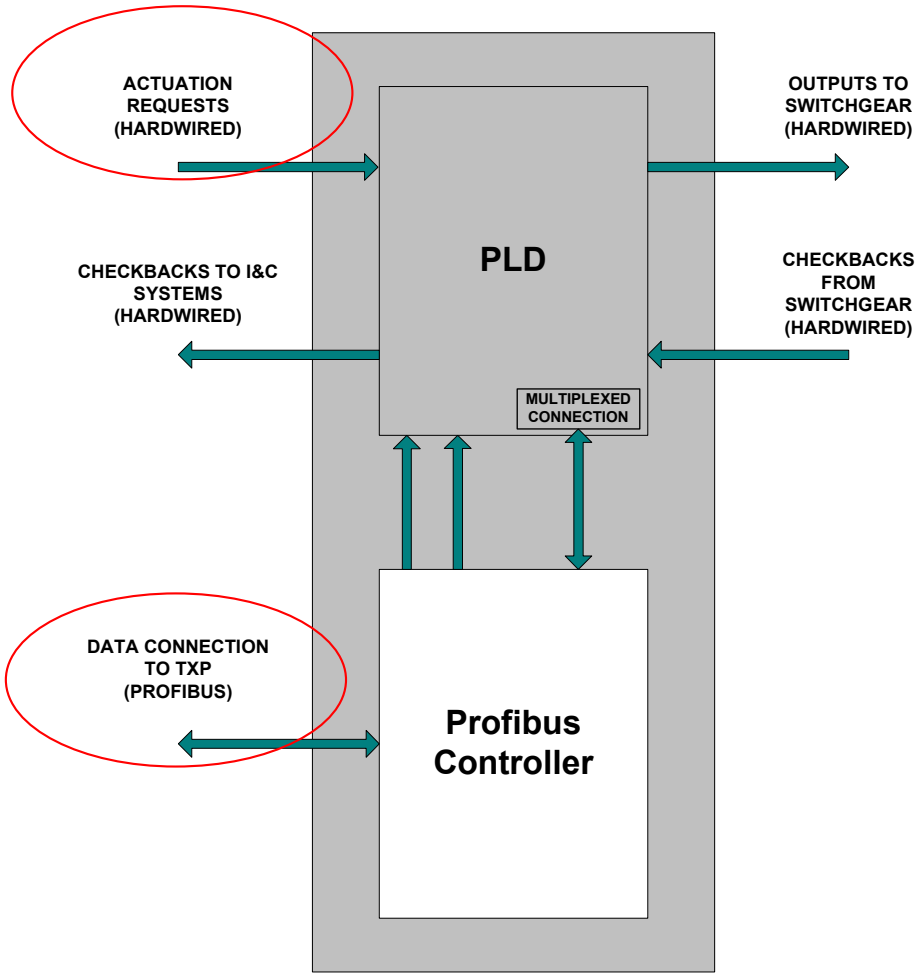
Priority Actuation and Control System: AV42 Priority Control Module

- TXS system component
  - 1E qualification
  - EMI/RFI qualified
  - Seismically qualified
- PLD for safety functions
  - Simple design
  - 100% testable
  - No operating software
- Profibus Controller for non-safety functions
  - Communication interface to TXP



Priority Actuation and Control System: Prioritization of Actuation Signals

- Board front test signals
- Automatic safety system actuation signals
  - PS
  - SAS
- Manual safety system actuation signals
  - SICS (MCR and RSS)
- Operational system actuation signals
  - RCSL
  - PAS
- Other inputs that help to determine priority
  - MCR-RSS SICS selection
  - Operational I&C disable
    - Can be set either from automatic safety system (PS, SAS) or manual safety system (SICS)



Priority Actuation and Control System: Module Drive Actuation and Monitoring

- **Outputs to Switchgear**
  - CMDON - OPEN/ON Command
  - CMDOFF - CLOSE/OFF Command
  - CS – Contact power supply (limit/torque switches, etc)

- **Inputs from Switchgear (i.e. Checkbacks)**
  - TRQOFF – Closed torque switch
  - TRQON – Open torque switch
  - TLNOFF – Not closed limit switch
  - TLNON – Not Open Limit Switch
  - MTV – Motor Temperature Violation
  - PCBTRIP – Circuit breaker tripped
  - TLON – Open limit switch
  - TLOFF – Closed limit switch
  - TP – Switchgear in test position