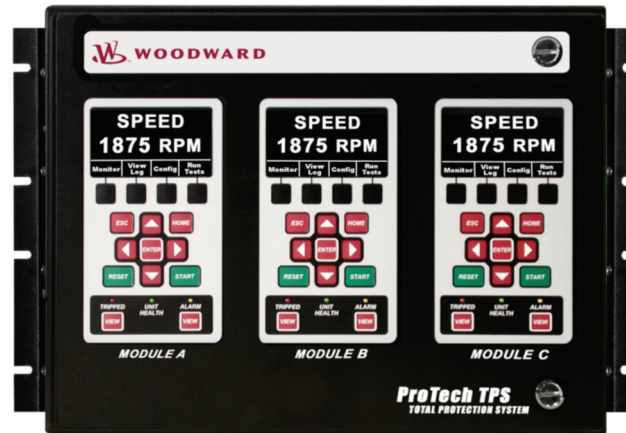


Product Quick Facts

- IEC61508 SIL-3 Certified
- API670 & API612 Compliant
- Overspeed protection
- Acceleration protection
- User programmable logic
 - 10 inputs
 - Discrete or analog
 - Trip/alarm logic
 - Test logic
- 2-out-of-3 voting
- High availability (TMR)
- On-line testing
- On-line repair
- Auto test routines
- Trip valve health monitoring function
- Trip, alarm & test logs
- Modbus communications (Ethernet optional)
- Password security protection
- 10 millisecond response time (independent voted models)
- Internal frequency generator

ProTech[®] TPS Total Protection System (Safety PLC with Integrated Overspeed Protection)



The ProTech[®] TPS is a safety PLC (programmable logic controller) with integrated overspeed protection designed to safely shut down any plant process equipment, engine, or steam, gas, or hydro turbine upon sensing a safety event. This standalone safety device accepts 10 discrete or analog inputs per module (30 total) and one speed (MPU or PROX) input (3 total), uses custom-

programmed logic to determine when a true safety event has occurred, then issues a shutdown command to safely shut down the equipment or turbine.

The ProTech TPS utilizes a triple modular redundant architecture and 2-out-of-3 voting logic to accurately determine unsafe conditions and ensure that no single-point failure will affect system reliability or availability. With this design, system failures (switches, transducers, modules) are detected, annunciated, and allowed to be repaired or replaced while the monitored system continues to operate on-line. Designed to safely protect high speed rotating equipment in system-critical applications, this safety PLC's total response time is less than 10 milliseconds for its independent voted output models and 20 milliseconds for its 2-out-of-3 voted models.

Depending on the system design, the ProTech TPS can be purchased with two dual redundant trip relay outputs using a 2-out-of-3 voted architecture, or with three independent non-voted trip relay outputs (typically used to interface with a 2-out-of-3 based trip block assembly). Programmable inputs and outputs, 4–20 mA speed readouts, and Modbus[®] *communications make this safety PLC easy to integrate into any plant safety system or function as a stand-alone safety system.

*—Modbus is a trademark of Schneider Automation Inc.

The ProTech TPS is available in flush-mount models designed to be installed within a standard 24" (610 mm) cabinet front door, or models designed to be bulkhead mounted on a wall or skid near the turbine set. Designed for harsh environments when installed within an enclosure, this device has an ingress protection rating of IP56 (protected against dust and completely protected against jets of water of similar force to heavy seas).

Designed for high reliability, each ProTech TPS module (A, B, C), depending on the purchased model, accepts two high-voltage power inputs (90–240 Vac / 100–150 Vdc) or one high-voltage power input (90–240 Vac / 100–150 Vdc) and one low-voltage power input (18–32 Vdc). This design works on a high-signal-select basis, allowing the unit to fully operate with either or both power sources available.

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