

# Chapter 1.

## General Information

This manual describes the ProTech® electronic two-out-of-three Overspeed Protection System. The manual explains the operation and gives the configuration procedures for the system. This manual does not contain instructions for the operation of the complete turbine system. For turbine- or plant-operating instructions, contact the plant-equipment manufacturer.

Before doing any installation, maintenance, adjustments, or configuration on the ProTech 203 system, read manual 82715, *Guide for Handling and Protection: Electronic Controls, Printed Circuit Boards, Modules*.

### Description

The ProTech 203 Overspeed Protection System is a digital overspeed trip device that senses prime mover speed through three magnetic pickups (MPUs). It consists of three identical, independent, speed-sensing units which continuously monitor prime mover speed and activate a trip relay when an overspeed condition is detected. The trip relays of the three units are connected in a two-out-of-three voting configuration so that if any single unit fails, the ProTech system will still provide the correct output. The units' functions include the ability to display the actual speed from each speed probe, display the highest speed signal, on-line testing, and modular design that allows a single failed unit to be replaced while the device is running. Light emitting diodes (LEDs) and digital displays on the unit front panel indicate the functional status.

### Applications

The ProTech system can be ordered in either a de-energize-to-trip model or an energize-to-trip model.



#### **WARNING—RECOMMENDED MODEL**

**Woodward strongly recommends use of the de-energize-to-trip model for reasons of general safety. With an energized-to-trip model, the prime mover may not trip on loss of power. That failure to trip may result in property damage or personal injury and loss of life. However, Woodward recognizes that some applications will require the energize-to-trip option.**

Because Woodward recognizes that some installations will use energized-to-trip models, all ProTech systems have been designed with components of the highest quality and relays with operating characteristics that far exceed the anticipated requirements of the device.

The ProTech system can also be configured to be compatible with various combinations of power sources. Tables 1-1, 1-2, and 1-3 show the available ProTech models, the corresponding part numbers, and the voltage ranges.

Table 1-1. De-energize-to-Trip ProTech Models

Part No.	UNIT A	UNIT B	UNIT C
9907-147	24 Vdc	24 Vdc	24 Vdc
9907-149	120 Vac/dc	120 Vac/dc	120 Vac/dc
9907-151	220 Vac	220 Vac	220 Vac

Table 1-2. Energize-to-Trip ProTech Models

Part No.	UNIT A	UNIT B	UNIT C
9907-146	24 Vdc	24 Vdc	24 Vdc
9907-148	120 Vac/dc	120 Vac/dc	120 Vac/dc
9907-150	220 Vac	220 Vac	220 Vac

Table 1-3. Voltage Ranges

Input Power Requirements Per Kernel
24 Vdc = 18–32 Vdc, 5.12 W
120 Vac/dc = 88–132 Vac, 12.5 VA
90–150Vdc, 4.77 W
220 Vac = 180–264 Vac, 16.4 VA

## References

The following Woodward publications contain additional product or installation information on overspeed protection systems and related components.

- 82715 *Guide for Handling and Protection: Electronic Controls, Printed Circuit Boards, Modules*
- 82510 *Magnetic Pickups and Proximity Switches for Electronic Governors*
- 50532 *EMI Control for Electronic Governing Systems*