

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

3500 SYSTEM

3500/53M 286566-01

OVERSPEED DETECTION MODULE

Used with the applicable 3500 System configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Bently Nevada 3500/53M 286566-01 manufacturer documentation

Bently Nevada* Asset Condition Monitoring

Description

The Bently Nevada® Electronic Overspeed Detection System for the 3500 Series Machinery Detection System provides a highly reliable, fast response, redundant tachometer system intended specifically for use as part of an overspeed protection system. It is designed to meet the requirements of American Petroleum Institute (API) Standards 670 and 612 pertaining to overspeed protection.

350Q/53M modules can be combined to form a 2-out-of-2 or a 2-out-of-3 (recommended) voting system.

The Overspeed Detection System requires the use of a 3500 rack with redundant power supplies.



imagination at work

Specifications and Ordering Information
Part Number 141539-01
Rev. G (10/13)

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Specifications

Inputs

Signal:

Each Overspeed Detection module accepts a single transducer signal from a proximity probe transducer or magnetic pickup. The input signal range is +10.0 V to -24.0 V. The module internally limits signals that exceed this range.

Input Impedance:

20 k Ω .

Power Consumption:

8.0 watts, typical.

Transducers:

Bently Nevada 3300-5 mm Proximitar*, 3300-8 mm Proximitar, 7200-5mm Proximitar, 7200-8mm Proximitar, 7200-11mm Proximitar, 7200-14mm Proximitar, 3300-16mm HTPS, 3300 RAM Proximitar, 3300XL-8mm Proximitar, 3300XL-11mm Proximitar, 3300XL-NSV Proximitar, or Magnetic pickups.

Outputs

Front Panel LEDs

OK LED:

Indicates when the 3500/53M Module is operating properly.

TX/XR LED:

Indicates when the 3500/53M Module is communicating with other modules in the 3500 rack.

Bypass LED:

Indicates when the 3500/53M Module is in Bypass Mode.

Test Mode LED:

Indicates when the 3500/53M is in Test Mode.

Alarm LEDs:

Indicates that an alarm condition has occurred with the associated relay.

Health LED:

Indicates when there is a fatal error or processor error.

Buffered Transducer Outputs:

The front of each module has one coaxial connector for buffered output. Each connector is short circuit and ESD protected.

Output Impedance:

550 Ω .

Transducer Power Supply:

-24 Vdc, 40 mA maximum.

Recorder:

+4 to +20 mA. Value is proportional to module full-scale range (rpm). Module operation is unaffected by short circuits on recorder output.

Application Warning: The +4 to +20 mA recorder output is not to be used as the input to the speed control governor. The emergency overspeed protection system must be separate from the speed controller.

Voltage Compliance (current output):

0 to +12 Vdc range across load. Load resistance is 0 to 600 Ω .

Resolution:

0.3662 μ A per bit $\pm$ 0.25% error at room temperature $\pm$ 0.7% error over temperature range. Update rate approximately 100 ms.