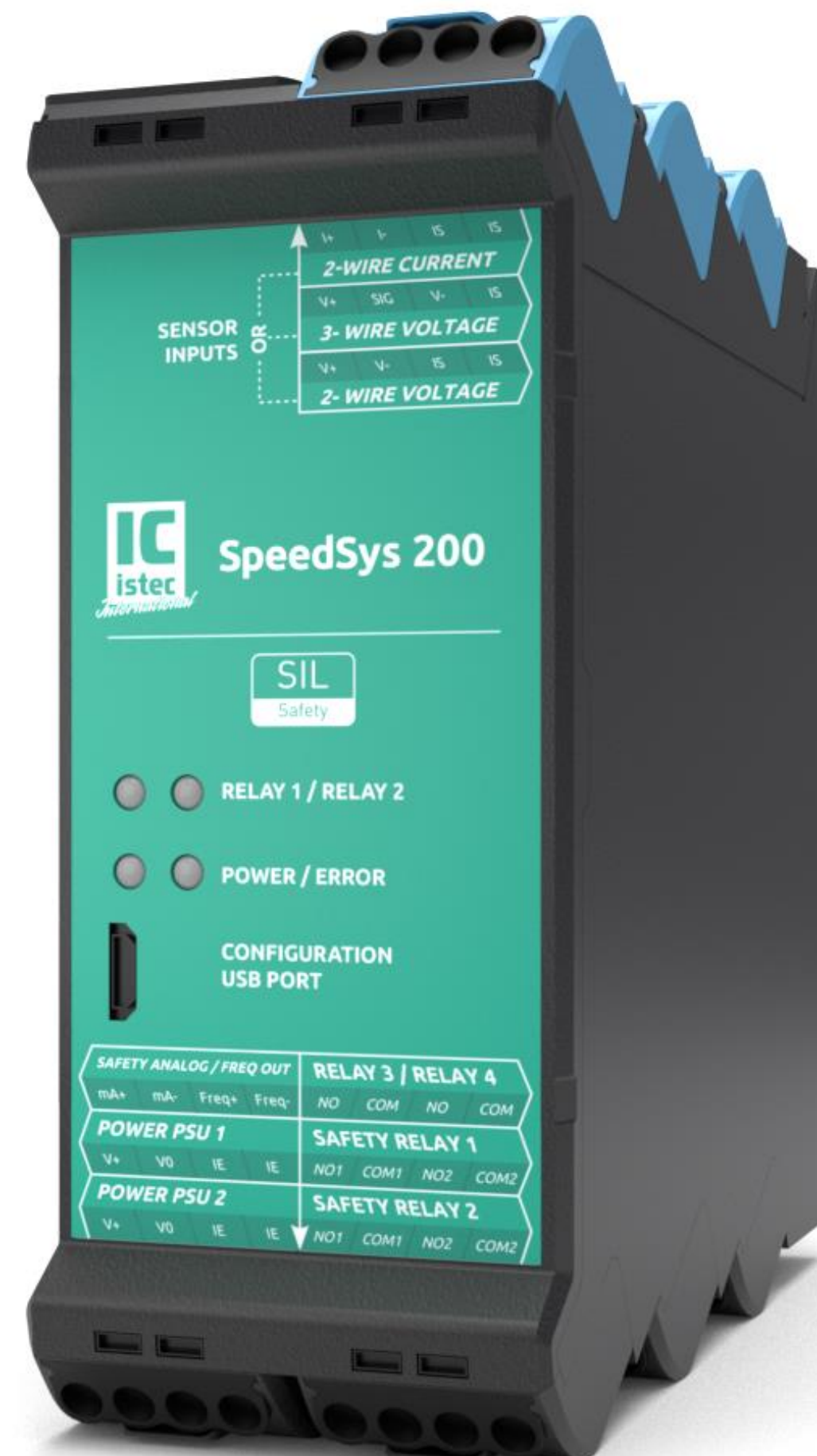# SpeedSys 200

GAME CHANGING INNOVATION
FOR SIL RATED OVERSPEED PROTECTION
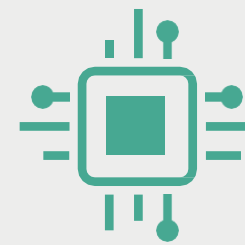
# SpeedSys 200

SpeedSys 200 is a SIL-rated overspeed detection system for rotating machinery. It delivers the core layer of protection with a compact architecture. Its small technical footprint and low-impact installation enables advanced protection to a wide range of applications.

# Benefits

## Safety by design

The simple and robust design of SpeedSys 200 meets the latest safety standards, and features easy maintenance and long proof test intervals.

## Any configuration

The overspeed detection system is compatible with all sensor types and applicable in any environment, making it easy to install and retrofit.
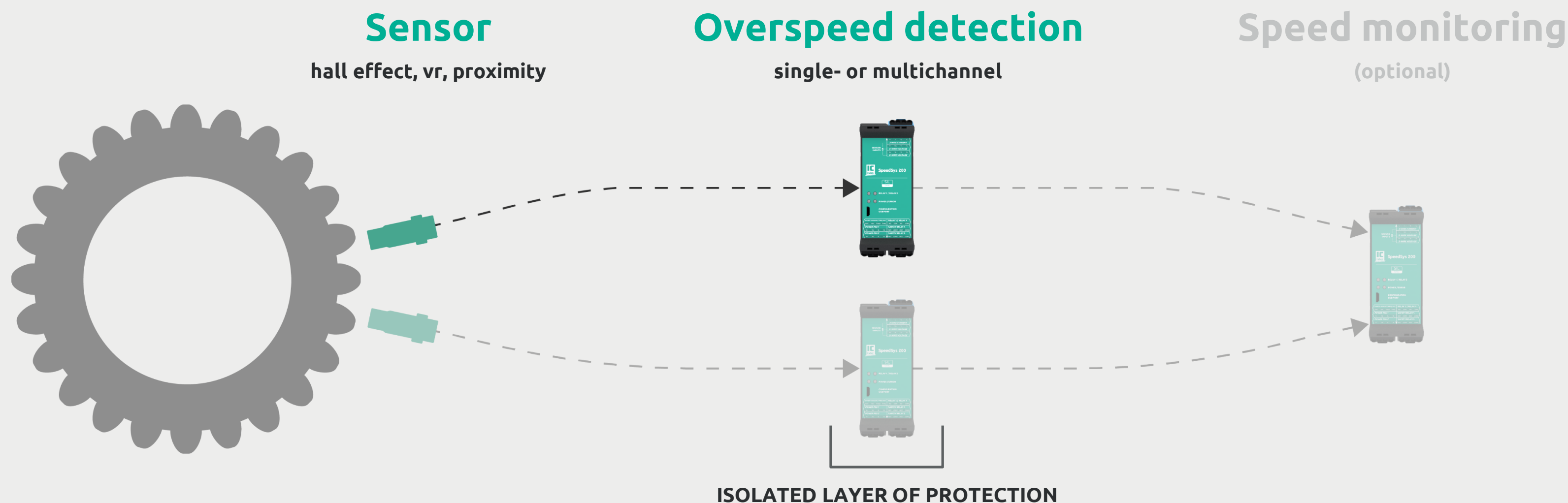
## Scalable system

SpeedSys 200 is modular and scalable to fit any application; from low impact stand alone configurations to multiple module voting structures for increased safety or availability.

# Design concept

SpeedSys 200 is designed as an independent layer of protection; to be fundamentally simple and robust. It delivers fast and reliable protection for speed and acceleration and complies to the industry standards.

A separate monitoring module can be added to include extensive monitoring and connectivity features to the configuration.

**Sensor**
**hall effect, vr, proximity**

**Overspeed detection**
**single- or multichannel**

**Speed monitoring**
**(optional)**



**ISOLATED LAYER OF PROTECTION**

4

# Application

The system architecture is designed to suit a wide range of applications. A single module can offer a reliable and economical solution for overspeed protection. Redundancy and voting structures can be created for more demanding applications or increased availability. Typical applications include:

- Microturbines
- Wind turbines
- Compressors and pumps
- Aeroderivative gas turbines
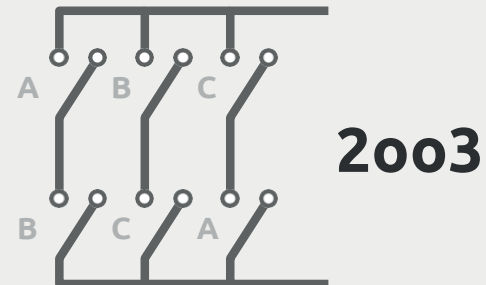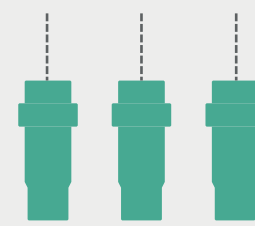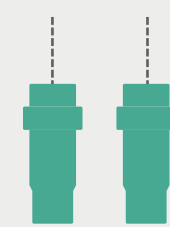- Gas- and steam turbines
- Marine applications

# Configurations
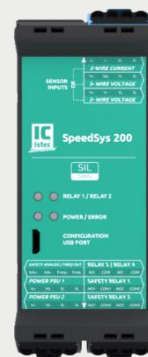
# Technical features

# Features

## Certified safety

SpeedSys 200 has been designed to meet the requirements for SIL 2 certified overspeed protection, featuring fast reaction times, advanced self-monitoring with long test intervals and sufficient safety outputs.

## Designed for versatility

The system has a small technical footprint that can be used in field enclosures or in control rooms, and industry standard in- and outputs for easy integration and retrofitting.

## Isolated inputs

Isolated inputs eliminate the need for separate isolators or barriers in the field, reducing failure modes and increasing sensor monitoring functions.

# System features

## System features

- SIL 2 certified protection

- 8 ms system response time

- 2 safety relays + 1 safety analog output

- Suitable for Hall-effect-, electromagnetic- or proximity sensors

- ATEX/IECEx Zone 0,1,2 (EX-ia) isolated inputs
- Advanced self-monitoring and diagnosis
- 10 year proof test interval (typical)

- External voting for redundant configurations

## Standards

*SpeedSys 200 is suitable for installations compliant to:*

API670

API612

IEC 61508, SIL 2

# Connection diagram



EDDY CURRENT
DRIVER
MAX. 1000 METER

- I+   B01
- I-   B02
-   B03
- SHI   B04

HALL SENSOR
MAX. 300 METER

- V+   B05
- SIG   B06
- V-   B07
- SHI   B08

OR

MAGNETIC PICK UP UNIT (MPU)
MAX. 30 METER

- V+   B09
- V-   B10
-   B11
- SHI   B12

MA+   A13   **SAFETY ANALOG OUT**
MA-   A14
SIG   A15   **FREQUENCY OUT**
GND   A16

V+   A17
V0   A18   **PSU 1**
SHI   A19
PE   A20

V+   A21
V0   A22   **PSU 2**
SHI   A23
PE   A24

B17
B18
K1-1   K1-2   **SAFETY RELAY 1**
B19
B20

B21
B22
K2-1   K2-2   **SAFETY RELAY 2**
B23
B24

B13
K3   **STATUS RELAY**
B14

B15
K4   **ALARM RELAY**
B16

USB-B

# An Istec product

We ensure maximal value generation of your machinery by ensuring a full coverage of protection and monitoring solutions for critical assets. Our product design bridges the gaps and taps into our 45 years of expertise in the industry.

Our business is to support the control of these critical sensors and systems during their operational life; to guarantee maximum machine availability and safety and to provide new monitoring data and machine insights.

# SpeedSys 200

GAME CHANGING INNOVATION
FOR SIL RATED OVERSPEED PROTECTION

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IC istec International

SpeedSys 200

SIL Safety

2-WIRE CURRENT
3-WIRE VOLTAGE
2-WIRE VOLTAGE

SENSOR INPUTS OR

I+ I- IS IS
V+ SIG V- IS
IS IS

RELAY 1 / RELAY 2

POWER / ERROR

CONFIGURATION USB PORT

| SAFETY ANALOG / FREQ OUT | | | | RELAY 3 / RELAY 4 | | | |
|---|---|---|---|---|---|---|---|
| mA+ | mA- | Freq+ | Freq- | NO | COM | NO | COM |
| POWER PSU 1 | | | | SAFETY RELAY 1 | | | |
| V+ | V0 | IE | IE | NO1 | COM1 | NO2 | COM2 |
| POWER PSU 2 | | | | SAFETY RELAY 2 | | | |
| V+ | V0 | IE | IE | NO1 | COM2 | NO2 | COM2 |