DATASHEET

SpeedSys® system

With SpeedSys 300

SPEEDSYS CABINET SYSTEM

For the ease of installation, the SpeedSys 300 is offered in a SIL3 rated cabinet system assembly. This cabinet combines the separate SpeedSys 300 modules into a system. The setup can be expanded with a SpeedSys T30 monitor for additional relays and monitoring functions. A display shows the most important values and statuses of the devices. Three push buttons on the front can be used as a Reset or Diagnostic Test initiation. All wiring can be connected directly to the modules. To assist with the wiring on common connections like power, 2oo3 voting and grounding, additional terminals are placed inside the box. This document only describes the specifics of the system.

For more information about the SpeedSys 300 and T30 modules, refer to their datasheets.

ADVANCED DETECTION FOR A WIDE RANGE OF APPLICATIONS

- Overspeed, underspeed and acceleration detection for critical and semi-critical rotating machinery
- Designed for versatility and scalable to any application
- Suitable for API 670 and API 612 applications
- 2oo3 voting and display

Typical applications include:

- Gas- and steam turbines
- Compressors and pumps
- Microturbines
- Marine applications

SAFETY SYSTEM BY DESIGN

- Certified SIL3 capability
- Fast 8 ms hardware response time (relays)
- 2x 2oo3 safety voting relays or
- 6x separate safety relays
- Binary in- and output
- Optional T30 monitoring module
- Modbus RS485
- Suitable for all common sensor types
- Advanced self-monitoring and diagnostics
- 10 years proof test interval (typical)

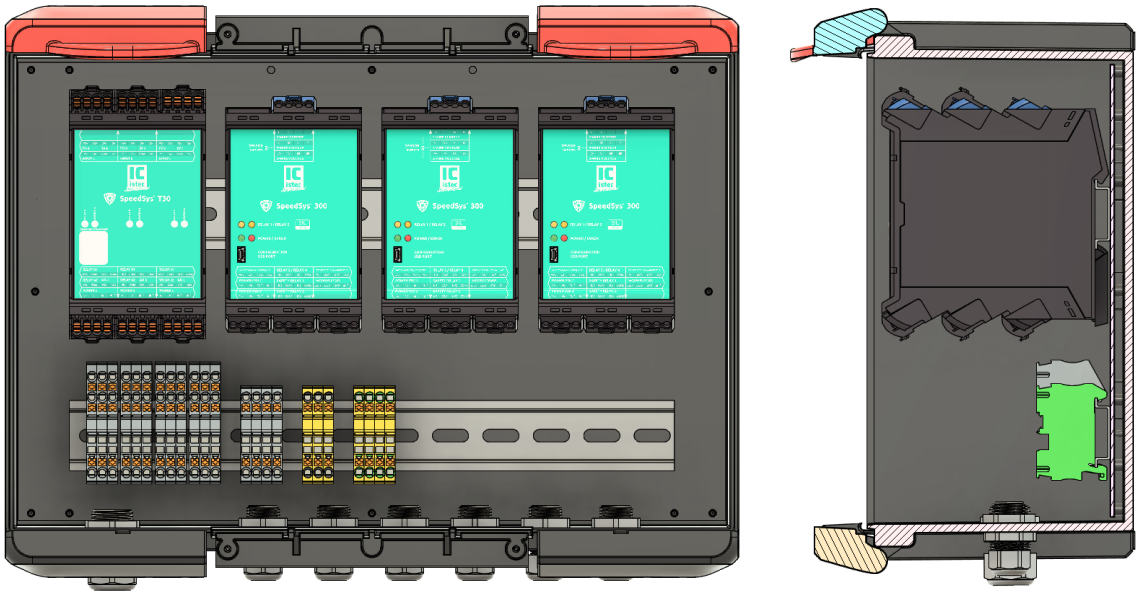

Figure 1: inside of the SpeedSys ODS system. Full setup including the optional SpeedSys T30 monitoring module

INPUT

Speed input options	
Hall effect sensor	3-wire Voltage signal
Electromagnetic sensor (MPU)	2-wire Voltage signal
Proximity sensor	2-wire Eddy Current- current signal
	3-wire Eddy Current- voltage signal, with additional external galvanic isolator
Binary input / Test IN	3x binary input Activation/deactivation clears the device of alarms, latching, errors and stored values or activates the Diagnostic Proof Test, or both Can be activated through the buttons on front panel or an external signal
SpeedSys T30	The signal inputs for the SpeedSys T30 are derived from the frequency outputs of the SpeedSys 300 modules. No additional inputs required.

OUTPUT

Safety relays	6 with SpeedSys 300
Non-safety relays	6 with SpeedSys 300
	Optional: 6 extra with SpeedSys T30
Binary output	6
Analog output	3 with SpeedSys 300
	Optional: 3 extra with SpeedSys T30
Digital frequency output	3 in the system cabinet with SpeedSys 300
	3 additional through the SpeedSys T30
Status LED indicators	Safety relay status on SpeedSys 300
	Non-safety relay status on SpeedSys T30
	Power on SpeedSys 300
	Error status on SpeedSys 300 and T30
Modbus display	Display to show live speed values, module and relay statuses, trend of the speed and relevant voltages and current of the system

SYSTEM

PC interface	USB-B mini for programming and status reading SpeedSys 300
	TCP/IP ethernet for programming and status reading SpeedSys T30
Power supply input	
Number	2 redundant power supply inputs
Input voltage range	24 V_{DC} (18 to 36 V_{DC})
Current consumption	SpeedSys 300 220 mA @ 24 Vdc per module (660 mA total)
	SpeedSys T30 480 mA @ 24 Vdc
	Modbus Display 88 mA @ 24Vdc
	Total consumption 1,24 A @ 24Vdc
Heat dissipation	SpeedSys 300: maximum 5,3 W @ 24V_{DC} per module (15,9 W total)
	SpeedSys T30 maximum 12 W @ 24dc
Housing and mounting	
Material	ABS cabinet and hinges and wall mount brackets
	Aluminium 19-inch mounting bracket
Dimensions	284 x 364 x 160 mm for the cabinet
	311 x 482 x 164 mm including the 19-inch brackets
Weight	SpeedSys 300 rack including modules and displays: ± 5,5 kg / 12.12 lbs
Terminals for ease of wiring	12x PT2.5 TWIN terminals for redundant 24Vdc distribution
	4x PT2.5 terminals for easy connection of internal 2oo3 wiring
	3x IS terminals to connect IS earth of sensor inputs
	4x IE terminals to connect IE terminals of all modules
	All other connections directly on the modules
Cable glands	1x M20 for power supply input
	6x M16 for sensor input and signal output
Environmental conditions	
Operating temperature	-20 to 60 °C (-4 to 140 °F)
Storage temperature	-40 to 85 °C (-40 to 185 °F)
Operating humidity	5 to 95 % RH (non-condensing, for one day).
Storage humidity	5 to 85 % RH (non-condensing)
Ingress protection	Under development (IP66 for the cabinet and cable glands)

CABINET SYSTEM VERSIONS

SSYSYSJB01	SpeedSys 300 cabinet
SSYSYSJB02	SpeedSys 300 cabinet + SpeedSys T30 monitor

CABINET SYSTEM OPTIONS

Wall mounting bracket	4 brackets per box to mount to the wall
19-inch cabinet bracket	2 brackets per system to mount in a 19-inch cabinet, to easily replace legacy overspeed systems

Figure 2: Wall mounting bracket

Figure 3: 19-inch mounting bracket

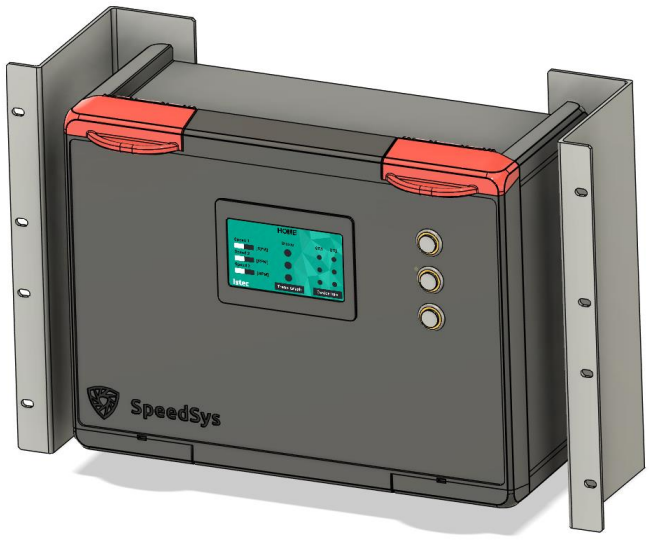

Figure 4: Cabinet including mounting brackets

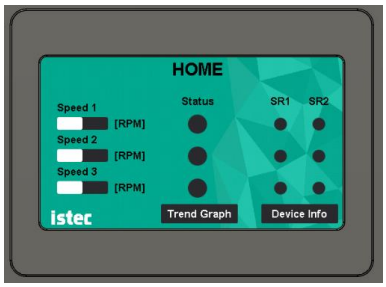

Figure 5: Display

ABOUT ISTEC

We ensure maximal value generation of your critical machinery with advanced protection and monitoring solutions. Every Istec product is designed to meet the increasing demands of industrial applications and taps into our 50 years of experience in the industry.

Our expertise is to support and maintain these critical sensors and systems in the field throughout their operational life; to increase safety, maximize machine availability and to provide new monitoring data and machine insights.

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