



DATASHEET

SpeedSys® T11

speed transmitter, monitor & switch

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The SpeedSys T11 is a speed measurement system, part of the SpeedSys tachometer series. The transmitter delivers speed monitoring functions for rotating equipment. The T11 converts the signal from a speed sensor into a processed output and is equipped with a display that shows the rotational speed. Enclosed in an industrial panel mount housing, it is designed for seamless integration in industrial environments.



SPEED MONITORING FOR A WIDE RANGE OF APPLICATIONS

- Speed monitoring and switching on rotating equipment.
- Advanced signal conditioning and conversion into highly accurate outputs for further processing

Typical applications include:

- Compressors and pumps
- Microturbines
- Wind turbines
- Gas and steam turbines
- Marine applications
- Elevators
- General automation

KEY FEATURES

- Fast system response to overspeed events
- One high speed relay
- Modbus connectivity
- Suitable for 3-wire voltage sensors and 2-wire voltage sensors

SYSTEM OVERVIEW

Interfaces

Sensor inputs	1x sensor input
Digital inputs	1x digital input
Relay outputs	1x SPDT
Analog outputs	1x analog output
Frequency outputs	1x frequency output
Power supply	1x power supply
Modbus	1x Modbus TCP

Speed monitoring

Overspeed	Yes
Underspeed	Yes

INPUT

Sensor input

Sensor input	Input for (a) 3-wire voltage, (b) 2-wire voltage
Frequency range	0.025 Hz to 35 kHz
Measurement accuracy	0.05 %

(a) 3-wire voltage input

Input type	3-wire voltage input (typical: Hall effect or proximity sensor)
Sensor power supply	24.0 V (@ 25 mA)
Input range	0 V to 24 V
Trigger level (programmable)	0 V to 12 V
Impedance	500 k Ω (typical)
Sensor monitoring	Open circuit detection, sensor power supply short circuit detection

(b) 2-wire voltage input

Input type	2-wire voltage input (typical: electromagnetic sensor)
Sensor power supply	n/a
Input range	50 mV _{RMS} to 80 V _{RMS}
Trigger level (programmable)	-12 V to 12 V
Impedance	100 k Ω
Sensor monitoring	Open circuit detection

Digital input

Input range	0 V to 24 V, max. 25 mA
Logic "0"	< 8 V
Logic "1"	> 14 V
Impedance	1 k Ω

OUTPUT

Relays

Number	1x high speed relays
Types	1x SPDT (1x COM 1x NC 1x NO)
Function	User-configurable relays for speed limits and/or diagnostics errors
Maximum switching capacity	30 V _{DC} / 2 A (resistive load) 30 V _{DC} / 100 mA (inductive load)
Hysteresis	User-configurable
Trip state	User-configurable normally open or normally closed

Analog output

Number	1x analog output.
Type	4 to 20 mA current loop.
Function	User-configurable range to transmit current output value equivalent to the measured speed.
Resolution	16 bit (0 – 24 mA)
Accuracy	0.1 %

Digital frequency output

Number	1x frequency output.
Type	Digital open collector output.
Signal	5 – 30 V _{DC, external} @ 24 V _{DC} / 10 mA. (recommended load resistor: 2400 Ω)

Status LED indicators

LED indicators	1x relay status & 1x system status
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SYSTEM FEATURES

Reaction time

Speed measurement time (T_m)	Dependent on signal frequency and averaging, typically ≤ 10 ms at high speed applications	
Hardware reaction time (T_h)	Relay:	≤ 4 ms
	Analog out:	≤ 20 ms
Total reaction time ($T_h + T_m$)	Relay, @ $T_m = 10$ ms, typical:	≤ 14 ms
	Analog out:	≤ 32 ms

PC interface

TCP/IP programming and status reading
(Windows® 10 and higher proprietary software application)

Modbus interface

Modbus TCP

Power supply input

Input voltage range	24 V _{DC} (18 V _{DC} – 31.2 V _{DC})
Current consumption	max. 260 mA
Reverse polarity protection	Yes

Heat dissipation

max. 4 W

Housing

Material	Noryl SE GFN1,
Dimensions	141 x 95 x 90 mm (5.55 x 3.74 x 3.54")
Weight	240 g
Mounting assembly	DIN 43835 form B clamps
Connectors	Detachable terminal block. 0.25 – 1.5 mm ² or AWG 26 – AWG 16

Environmental conditions

Operating temperature	-20 to 60 °C (-4 to 140 °F)
Storage temperature	-40 to 85 °C (-40 to 185 °F)
Operating & storage humidity	95 %. Condensation to be avoided.

Conformal coating

Yes

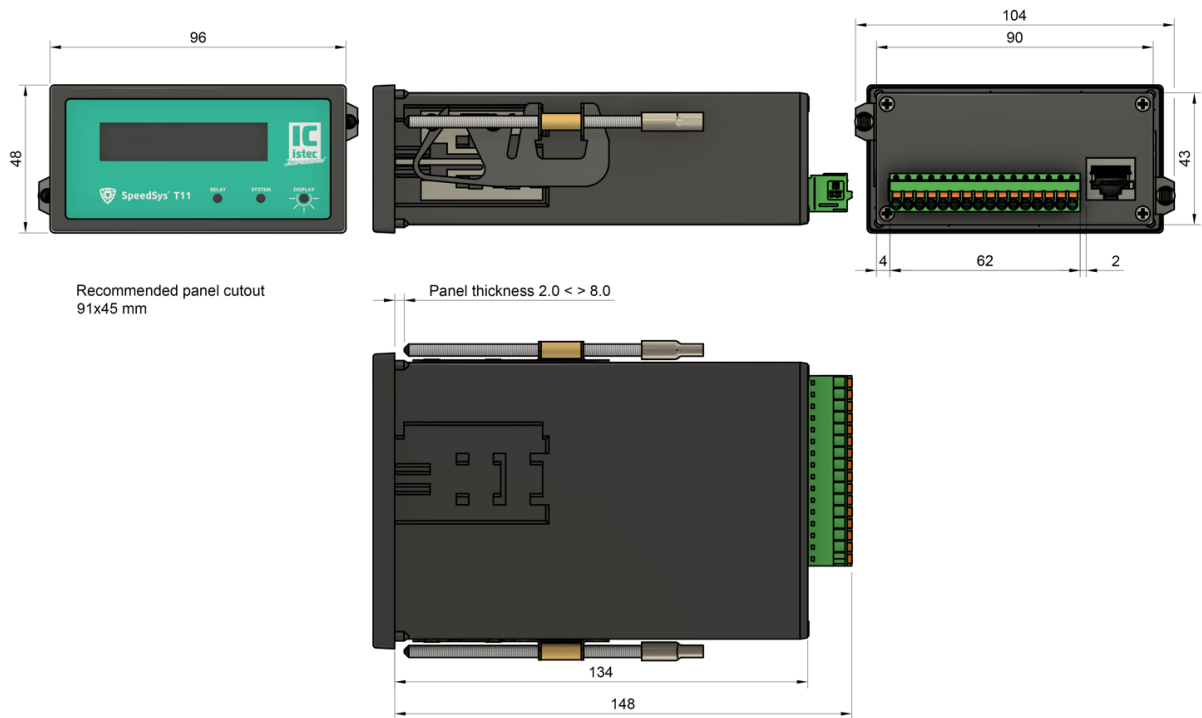
Ingress protection

Housing: IP 44
Terminals: IP 20
Indoor use or use in a protective enclosure

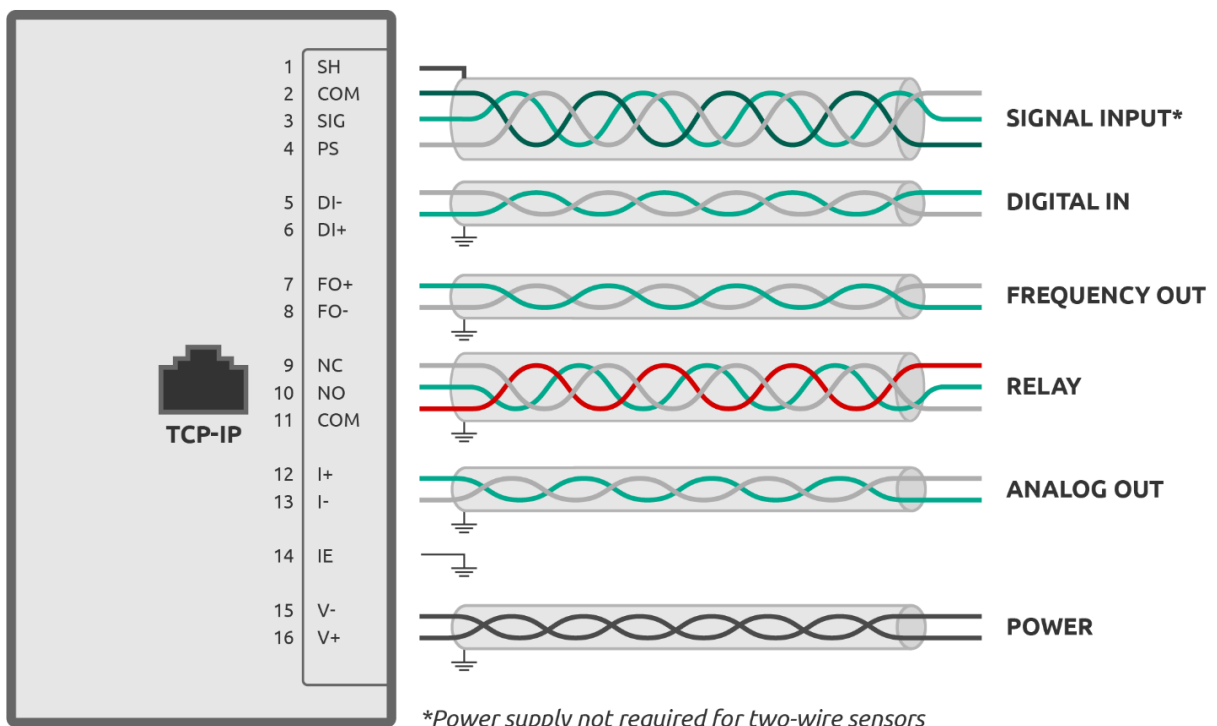
Other

Overvoltage category II
Pollution degree 2

DIMENSIONS



WIRING DIAGRAM



APPROVALS

International standards	CE; UKCA
Electromagnetic compatibility	EN 61326-1
Environmental	RoHS 3
Marine type approval	DNV

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Contact Istec International

Meer en Duin 8

2163 HA, Lisse Netherlands

+31 (0)252 433 400

www.istec.com

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