



DATASHEET

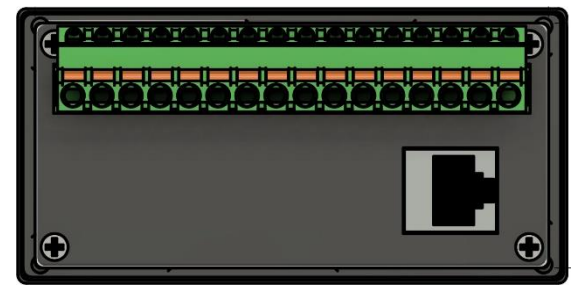
SpeedSys® T11

speed transmitter, monitor & switch

SpeedSys T11

Speed transmitter, monitor & switch.

The SpeedSys T11 is a speed measurement system that delivers speed monitoring functions to 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 fast responding relays.
- 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

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	1 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	24 V _{DC} / 20 mA. (Load resistor minimum 1200 Ohm @ 35 kHz)

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 ($T_h + T_m$)	Relays, @ $T_m = 10$ ms, typical: ≤ 14 ms Analog out, typical: ≤ 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. 160 mA
Reverse polarity protection	Yes

Heat dissipation

max. 4 W

Housing

Material	Noryl SE GFN1, black RAL 9005
Dimensions	141 x 95 x 90 mm
Weight	240 g
Mounting assembly	Using DIN 43835 Form B clamps
Connectors	Detachable Terminal block. 2.5 mm ² - Cable or 1.5 mm ² flex AWG 24 – AWG 12

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	75% averaged over the year; up to 90% for max 30 days. Condensation to be avoided.

Ingress protection

Housing IP 40 Terminals IP 20 (IEC 60529). Indoor use or use in a protective enclosure

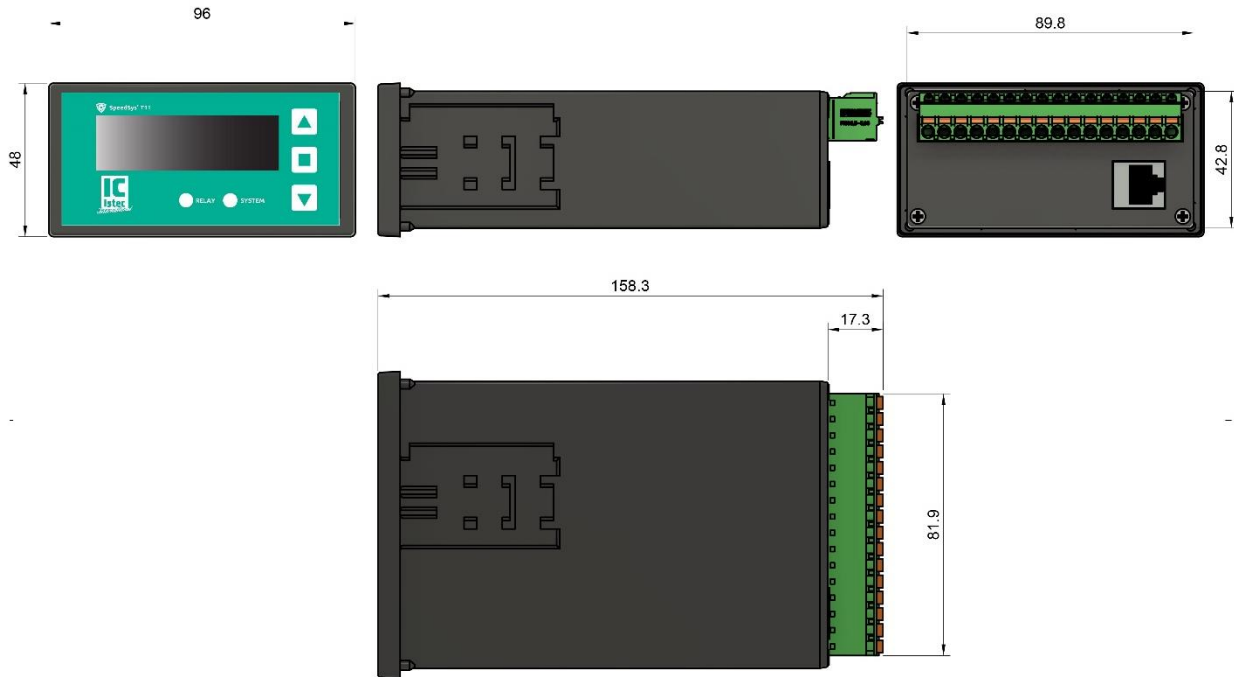
Other

Overvoltage category II
Pollution degree 2

Warranty

24 months from date of invoice

DIMENSIONS AND MOUNTING



CONNECTION DIAGRAM

Sh	0VS	Sign	+V	-DI	+DI	+FO	-FO	NC	NO	COM	+I	-I	IE	0V	+24V
T11															

Sensor connections

- Sh : Screen – sensor cable
- 0VS : Sensor reference voltage
- +V : Sensor supply
- Sign : Sensor signal analog

Binary input

- +DI : Digital IN positive
- DI : Digital IN negative (reference)

Open collector output

- +FO : Frequency OUT positive
- FO : Frequency OUT negative

Relay output

- NC : Normally closed
- NO : Normally open
- COM : Common

Analog output

- +I : Current positive
- I : Current negative

Supply

- +24V : Power (18 ... 32V)
- 0V : Power reference
- IE : Instrument earth

APPROVALS

International standards	CE; UKCA
Electromagnetic compatibility	Conform EN 61326-1
Environmental	RoHS 2
Marine type approval	DNVGL

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