PARTNER | SOLVE | DELIVER

Datasheet

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S12H-SSTDSO-R5CB2-001

Gear Tooth Speed Switch

- Speed Switch
- Transistor output-ferrous target activated
- Regulated input, NPN with 5k pull-up
- Stainless 12x1mm x 52mm housing
- Integral 4 pin male 12mm micro connector

CUSTOMER FOCUSED ENGINEERING + MODULAR DESIGN

Part Description: S12H-SSTDSO-R5CB2-001

Housing	Sensor Type & Function	Electrical Option	Connection Type	User Defined Frequency
S = Stainless Steel, Thread Pitch M12x1, 52mm Long	Speed Switch Gear Tooth & Ferrous Targets	Regulated Input NPN w/5k Pull up	CB2 = Integral 4 Pin Male 12mm Micro Connector	Switch Frequency xxx in Hz

Modify, update, or enhance any sensor with our modular features and functionality.

HOUSING *- Aluminum, stainless steel, plastic, threaded, flange mount, customer specific*

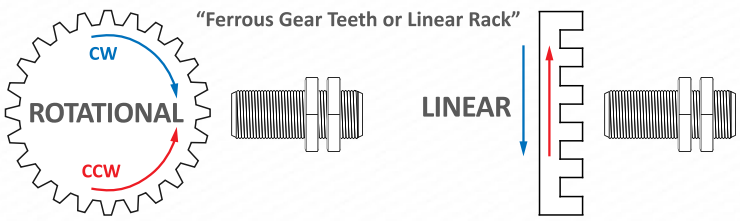
ELECTRICAL *- Every sensor function available in various electrical options (NPN, PNP, TTL, etc.)*

CONNECTION *- Deutsch, Amphenol, many other brands, free end wires, pigtails, any length*

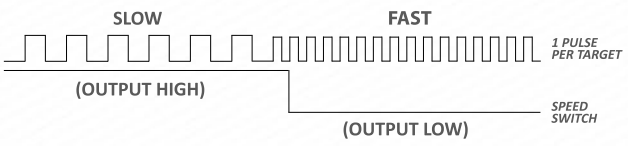
Need a Custom Sensor Solution?... Send us your application specific requirements at *sensorso.com*

'Steel Gears & Ferrous Target Actuated Speed Switch with Transistor Output'

Overspeed, Underspeed, Zero-Speed



OUTPUTS



DESCRIPTION

- Speed switch output turns on/off dependent on factory programmed frequency.
- 001 Hz switch point functions as "0 speed" indicator. For other switch speeds contact Sensor Solutions.
- Single channel digital square wave output for resolving actual speed.
- Detects gears and other ferrous targets using Hall Effect Technology
- Capable of detecting 0-32 pitch gears, bolt heads, holes in steel plates, and other ferrous targets
- No orientation required. Use lock nuts to set air gap within range of target

FEATURES

- Ferrous Target Speed Switch
- No Orientation Required
- Add –xxx in Hz to End of PN – contact factory for custom switch point models

Sensor Solutions
A STANDEX ELECTRONICS COMPANY

Type - SSG

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Gear Tooth Speed Switch

OTHER OPTIONS

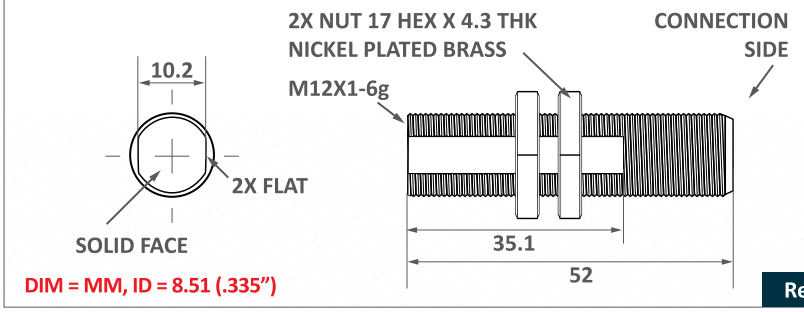
As well as these Ferrous Target Speed Switches, we offer Magnet / Magnet Tape activated Speed Switches, and Gear Tooth Speed Switches designed to work with standard gears. We have options for relay outputs, NPN outputs, and TTL outputs.

Note: Check our website or contact us to discuss any of our magnetic speed, count, and position detection sensors.

Electrical Specifications	Conditions	Min	Max	Unit
Temperature Range	Operating	-40	+110	Deg C
Supply Voltage, Vcc	Over temperature	+8	+30	Volts DC
Supply Current	Into Vcc, Vcc=12V	5	16	mA
Internal Pull up Resistor	Vcc to Vout	4.9	5.1	kOhms
Vol, Low Level Vout	Vcc = 12V, Rload >100k	0.0	0.7	Volts
Voh, High Level Vout	Vcc = 12V, Rload >100k	11.75	12	Volts
Overspeed TRIP Frequency	Output goes low above	0.98	1.01	Hz
Underspeed Release Freq.	Output goes high below	0.94	0.97	Hz
ESD (like product qualified)	Nondestructive	-	2000	Volts
EMI (like product qualified)	20k to 1 G Hz	-	20	V / M

Rev D

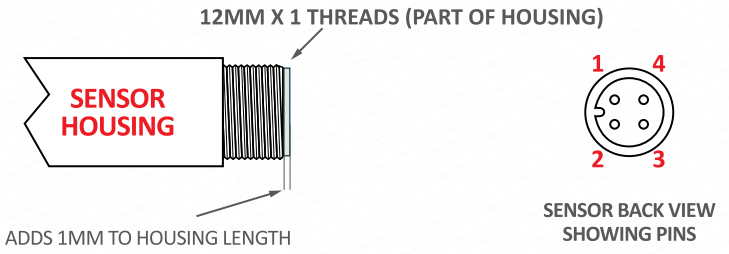
S12H Housing, 303 Stainless Steel, M12X1, 52mm Long



DIM = MM, ID = 8.51 (.335")

Rev B

CB2, Integral 4 Pin Male 12mm Micro Connector



Rev A

Absolute Max Limits	Min	Max	Unit
Supply Voltage, Vcc-Gnd	-32	+32	Volts
Voltage at Output	-.3	30	Volts
Sink Current into Output	-	50	mA
Short Circuit Prot. Vout-Gnd	-	Indef.	Minutes
Short Circuit Prot. Vout-+Vcc	-	None	Minutes

Environmental Specifications	
Corrosion Resistance	500 hours salt spray ASTM B-117
Installation Torque	23 Foot-Pounds Maximum
Enclosure	Nema 1,3,4,6,13 & IEC IP67
Vibration	10 G's 2 to 2000 Hz Sinusodal
Mechanical Shock	100 G's, 11 mS Half-Sine

Sensor Characteristics

Output State at 0 Speed: High (Transistor Off)

Air Gap Range, Targets	Min	Typ	Max
.22" wide, .65" apart, .30" deep:	.000"	.070"	.140"*
.12" wide, .29" apart, .25" deep:	.000"	.045"	.090"*
.10" wide, .17" apart, .17" deep:	.000"	.028"	.055"*
.06" wide, .10" apart, .10" deep:	.000"	.015"	.030"*
TRIP Frequency Accuracy, Output LOW	.98%	1.0%	1.01%*
RELEASE Frequency Accuracy, Output HIGH	.99%***	1.0%	1.02%
STOP DETECT TIME, Output returns high after sudden stop	10ms (Typical)		

*** Gap the sensor less than MAX GAP.**
**** Output is LOW if teeth are passing by faster than 1.02 * Trip Frequency.**
*****Output is HIGH if teeth are passing by slower than 0.99 * Release Frequency**

Convert RPM to Hz

Over/Under Speed Trip Points are in Hz, pulses per second.

To convert RPM (Revolutions per Minute) to Hz, you need to know the target's pulses per revolution, "N". A 20-tooth target produces 20 pulses, so N=20.

Hz = RPM * (N / 60). Or RPM = Hz * (60 / N).

*Example: For a 20-tooth target and 500 Hz trip point, RPM = 500 * (60 / 20) so the output switches low at 1500 RPM.*

Connections Chart

Pin 1	Vcc	Pin 3	Ground
Pin 2	1 Pulse per Target	Pin 4	Speed Switch Output
CB2-SSTDSO			

OTHER MATING CONNECTORS AND CABLES AVAILABLE

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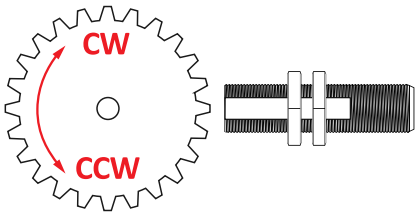
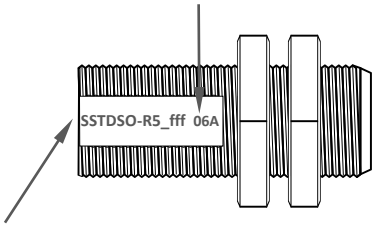
Sensor Function



THIS SENSOR WORKS WITH ANY ORIENTATION!

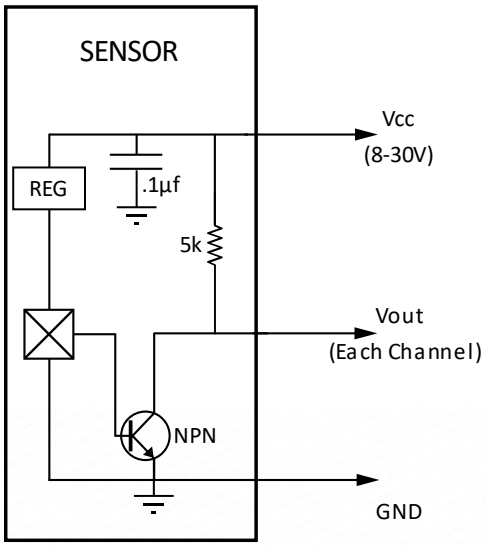
S12H-SSTDSO

Marking



CHARACTERISTIC-OPTION_TRIP SPEED
MARKED ON THIS SURFACE
fff = SWITCH FREQUENCY IN Hz #

R5, Regulated, 5k Resistor

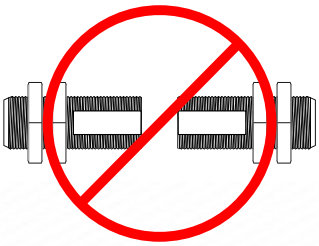


Date Code 'YYM' YY = YEAR, M = MONTH

A JAN	D APR	H JUL	L OCT
B FEB	E MAY	J AUG	M NOV
C MAR	G JUN	K SEP	N DEC

Handling Instructions

DO NOT CONTACT FACE TO FACE



CONTACT WITH OTHER MAGNETS *MAY* REDUCE THE MAXIMUM OPERATING GAP

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