S18-SSTHS1-R5SA5-30

Magnet Detecting Speed Switch

- **Moving Magnet Actuated Speed Switch, 55 Gauss sensitivity**
- **Transistor output for Over or Under Speed**
- **Regulated input, NPN with 5k pull-up**
- **Stainless 18x1mm x 53mm housing**
- **Shielded 4 wire 22 AWG 80°C PVC, 5ft**

CUSTOMER FOCUSED ENGINEERING + MODULAR DESIGN

Part Description: S18-SSTHS1-R5SA5-30

Housing	Sensor Type & Function	Electrical Option	Connection Type	User Defined Frequency
S = Stainless Steel, Thread Pitch M18x1, 53mm Long	South Pole Magnet Actuated Speed Switch	Regulated Input NPN w/5k Pull up	SA Shielded 4 Wire 22 AWG 80°C PVC	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*

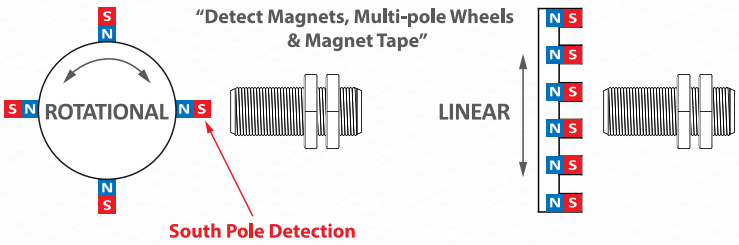
ELECTRICAL *- Every sensor function available in various electrical options (NPN, PNP, TTL, etc.)*

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

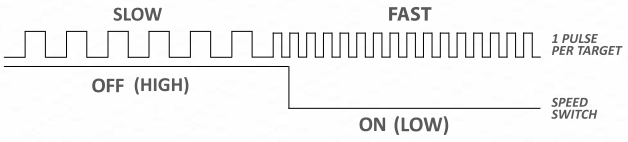
Need a Custom Sensor Solution?... Send us your application specific requirements at *sensorso.com*

'South Pole Magnet Actuated Speed Switch with Transistor Output'

Overspeed, Underspeed, Zero-Speed



OUTPUTS



Type - SSM

DESCRIPTION

- Speed switch output turns on/off dependent on factory programmed frequency.
- 30 Hz switch point will activate the output at any speed where 30 or more magnets pass the sensor within 1 second. Contact us for lower or higher switching speeds.
- Single channel digital square wave output for resolving actual speed.
- Detects the South Pole field from permanent magnets using Hall Effect Technology
- Detects south pole fields of 55 Gauss or more. Operate gap range dependent on magnet size/type
- No orientation required. Use lock nuts to set air gap within range of target

FEATURES

- Non-contact speed measurement
- No Orientation Required
- Add –xxx in Hz to End of PN – contact factory for custom switch point models

Sensor Solutions
A STANDEX ELECTRONICS COMPANY

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OTHER OPTIONS

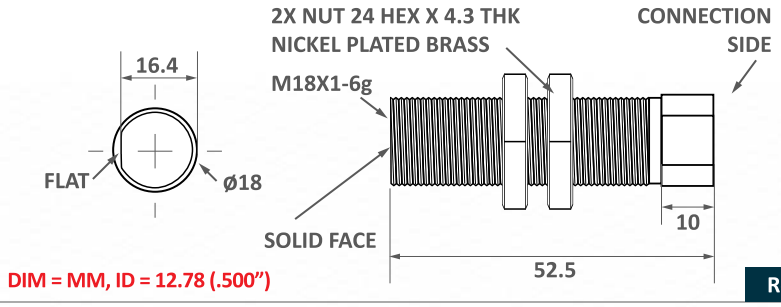
As well as these Ferrous Target Speed Switches, we offer Magnet / Magnet Tape activated Speed Switches, and Gear Tooth Speed Switches designed to work with standard gears. We have options for relay outputs, NPN outputs, and TTL outputs.

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	2.5	12	mA
Internal Pull up Resistor	Vcc to +5V	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	28	31	Hz
Underspeed Release Freq.	Output goes high below	24	27	Hz
ESD (like product qualified)	Nondestructive	-	2000	Volts
EMI (like product qualified)	20k to 1 G Hz	-	20	V / M

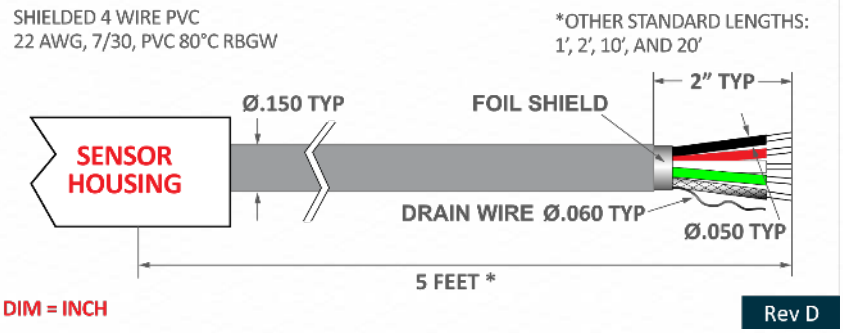
Grey shaded specs are 100% Final tested before shipping Rev C

S18 Housing, 303 Stainless Steel, M18X1, 53mm Long



DIM = MM, ID = 12.78 (.500") Rev E

SA5, Shielded 4 Wire 22 AWG 80°C PVC



DIM = INCH Rev D

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	60 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 – S Pole Sensitive

Output State at 0 Speed: High (Transistor Off)

Operate Point Over Temp 100% Tested at 25°C before shipping	15 G	55 G	76 G
Release Point Over Temp	5 G	35 G	57 G
Hysteresis Over Temp	5 G	20 G	28 G
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 to make sure it sees >77 G when close, <17 G when far.**

**** 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 target with 2 S pole magnets will produce 2 pulses per revolution, so N=2.

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

*Example: Using 2 magnets and a 30 Hz trip point, RPM = 30 * (60 / 2) so the output switches low at 900 RPM.*

Connections Chart

Red	Vcc	Black	Ground
Green	Pulse Vout	White	Switch Vout
S18-SSTHS1			

OTHER MATING CONNECTORS AND CABLES AVAILABLE

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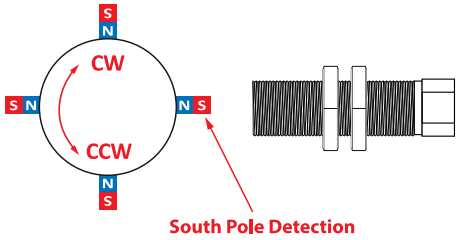
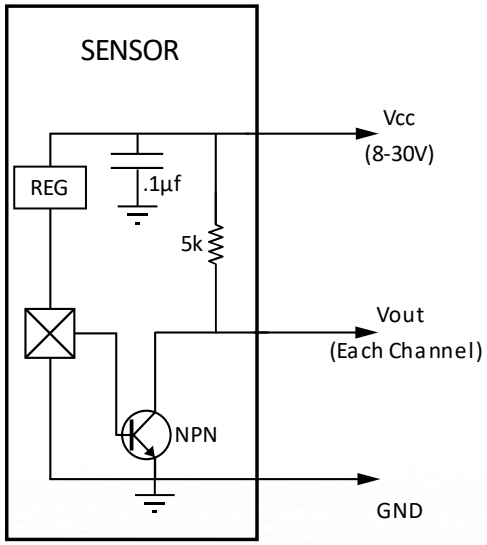
Sensor Function



ROTATIONAL AND LINEAR DETECTION

S18-SSTHS1

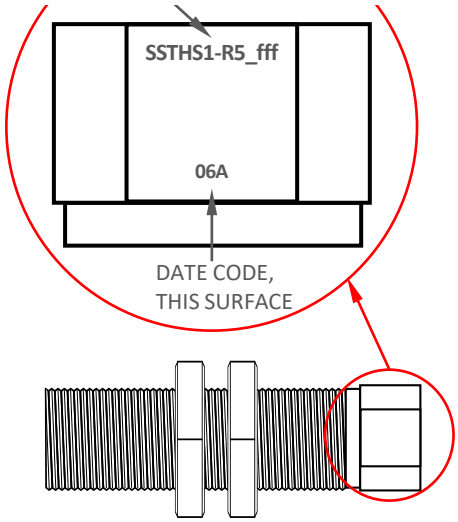
R5, Regulated, 5k Resistor



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

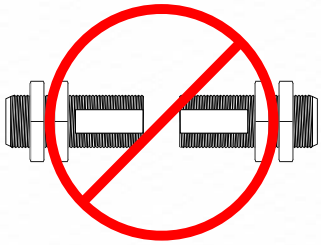
Marking

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



Handling Instructions

DO NOT CONTACT
FACE TO FACE



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

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