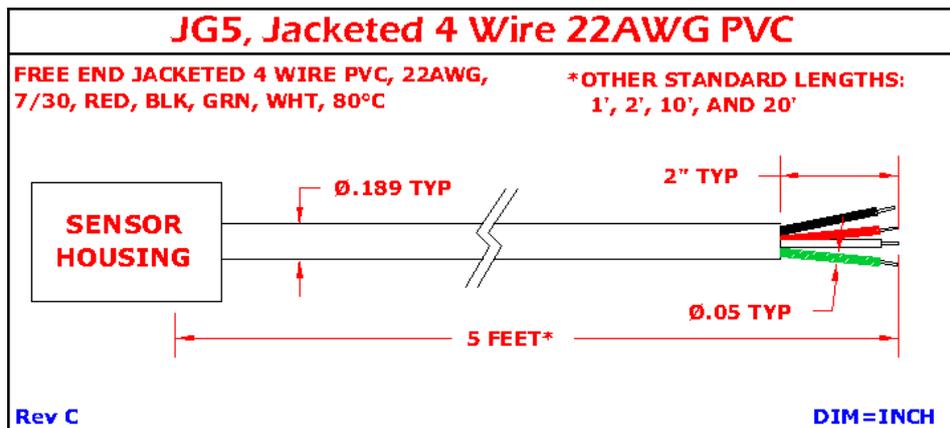
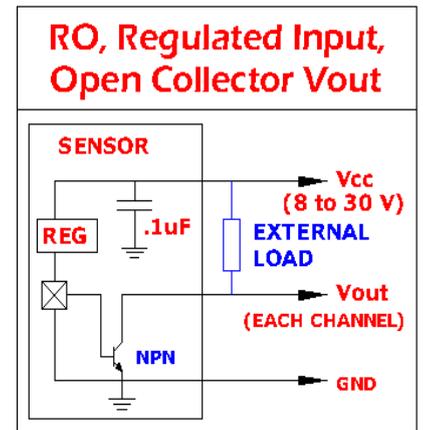
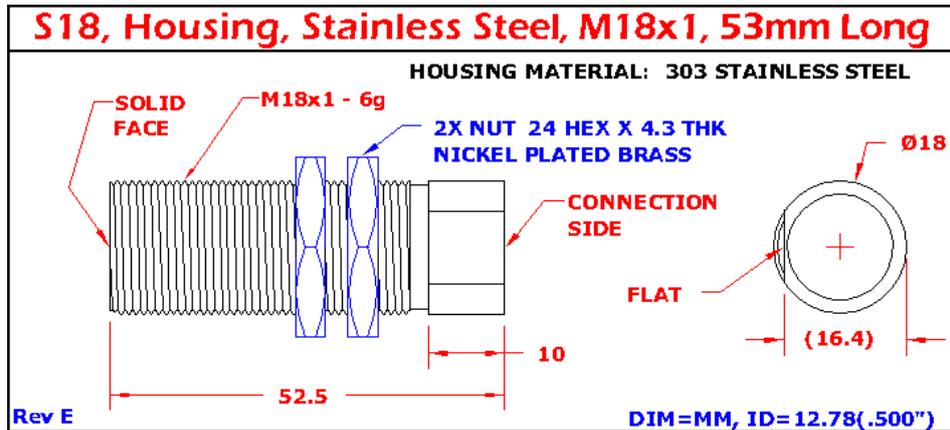


- TRUE ZERO SPEED
- ALL STEEL GEARS 4-24 PITCH
- 1/2 TOOTH MIN HYSTERESIS

ENVIRONMENTAL SPECIFICATIONS - S18	
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 Sinusoidal
Mechanical Shock	100 G's, 11 mS Half-Sine



Connections Chart

Red	Vcc
Black	Ground
White	Speed
Green	Direction

JG5-37ADSD

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

The 37ADSD Digital Speed Sensor provides 2 digital outputs as gear teeth rotate by the sensor's face. These sensors have 2 internal sensing elements that are physically placed 1/4, 3/4 or 1 1/4 tooth apart. The internal quadrature phase angle (phase shift from channel A to channel B) ideally should be 90 degrees. This will only happen if the correct gear pitch is used, and the sensor is aligned to the target's rotation direction. Therefore, when ordering this sensor, it cannot be built until the factory receives the gear pitch for the intended target.

$$\text{Gear pitch} = \frac{\text{the \# of teeth on the gear}}{\text{the gear's contact diameter in inches}}$$

Specifications may not be valid when the application is not detecting an end-sensed, 14.5 pressure angle, steel spur gear. The presence of ferrous metals or strong magnetic fields in close proximity to the sensor's internal magnet may also invalidate the specifications. Engineers are available to assist in target design and applications with non-standard targets. Custom target specifications can only be guaranteed when the customer supplies a target along with any additional components that may affect sensor output, and the customer has validated function in the finished application.

The 37ADSD is a true zero speed Gear Tooth Sensor. The direction signal is resolved by a D Flip flop. Internal signal B is used for the D signal, and signal A (SPEED) runs the clock input. When the gear changes direction, the direction signal changes states upon the falling edge from SPEED. The direction signal is designed to always power up with the output off if the target is not moving.

For non standard targets such as bolt heads and holes in rotating discs we offer the 37ADSDO sensors. Call or check our website to compare options.

37ADSD-RO, Electrical & Functional Specifications

ABSOLUTE MAX LIMITS	MIN	MAX	UNITS
Supply Voltage, Vcc	-30	+30	Volts DC
Voltage applied to output	-0.3	+40	Volts
Current into output	--	20	mA
Current out of output	--	n/a	mA
Load Dump, 40mS, Rs = 20	--	60	Volts
Output Power, T=25C	--	350	mW

ELECTRICAL SPECS	CONDITIONS	MIN	MAX	UNITS
Temperature Range *	Operating	-40	+110	Deg C
Supply Voltage, Vcc	Over temperature	+8	+30	Volts DC
Supply Current	Into Vcc @12V	+7	+24	mA
Frequency Range	True zero speed	0	10	kHz
Vol, Low Level Vout	Vcc=12, Rpu=1k	0	1.0	Volts
Leakage Current	Vout high	--	20	uA
Pull up resistor	Internal	none	none	k ohms
Output Rise Time 10-90%	R pu=1k, C < 100pF	--	1.0	uS
Output Fall Time 90-10%	R pu=1k, C < 100pF	--	1.0	uS
ESD **	Nondestructive	--	2000	Volts
EMI **	20k to 1 G Hz	--	20	V/M

* T max = 125°C is available, contact factory.

*** Non contacting

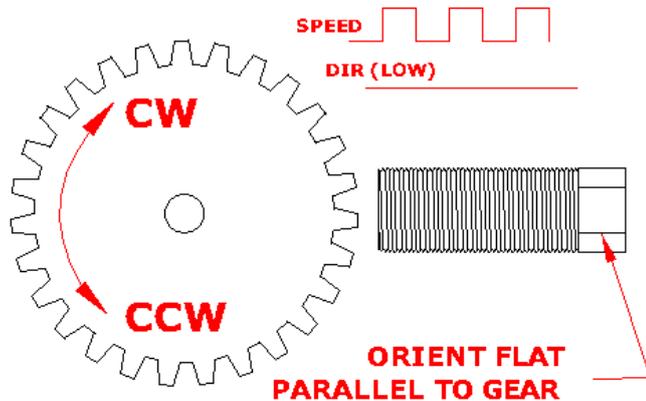
** Similar Product Qualified

TARGET PERFORMANCE GEAR PITCH ~(#Teeth/Diam. in inches)	AIR GAP RANGE***	TYPICAL MAX GAP	TYP. OUTPUT DUTY CYCLE	ALIGNMENT SKEW ANGLE
4 (.785" tooth to tooth)	.000 to .140"	.160"	40 to 60 %	±35 deg
6 (.524" tooth to tooth)	.000 to .120"	.140"	40 to 60 %	±30 deg
8 (.393" tooth to tooth)	.000 to .100"	.125"	40 to 60 %	±30 deg
12 (.262" tooth to tooth)	.000 to .075"	.100"	35 to 65 %	±25 deg
16 (.196" tooth to tooth)	.000 to .060"	.080"	35 to 65 %	±20 deg
20 (.157" tooth to tooth)	.000 to .040"	.055"	30 to 70 %	±15 deg
24 (.131" tooth to tooth)	.000 to .025"	.035"	30 to 70 %	±10 deg

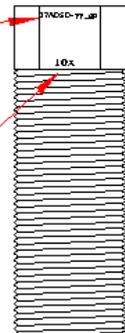
Rev B

CHARACTERISTIC-OPTION_GEAR PITCH MARKED ON THIS SURFACE, yy=OPTION, gp=GEAR PITCH (e.g. _08 = 8 PITCH GEAR)

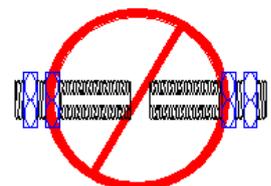
ALIGNED AS SHOWN, DIRECTION IS LOW FOR CW ROTATION



DATE CODE, THIS SURFACE



DO NOT CONTACT FACE TO FACE



CONTACT WITH OTHER MAGNETS MAY REDUCE THE MAXIMUM OPERATING GAP

S18-37ADSD