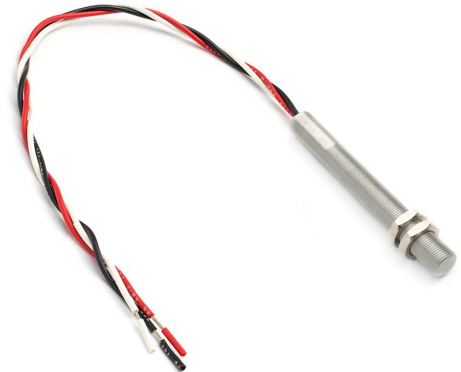


# A12F-18ADSO-ODP23

## Single Ch-Target Tracker Gear Tooth Sensor

- Dynamic Speed Sensor
- No Orientation Required
- N channel open drain output
- Aluminum M12 x 1mm x 70mm housing
- Free end PVC 22 AWG wires (3 foot length)



### CUSTOMER FOCUSED ENGINEERING + MODULAR DESIGN

Part Description: **A12F-18ADSO-ODP23**

Housing	Sensor Type & Function	Electrical Option	Connection Type
Aluminum M12 x 1mm 70mm Long	Digital Single Output Gear Tooth Sensor	OD, Open Drain N Ch	P23 = Free End PVC 22AWG Wires

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

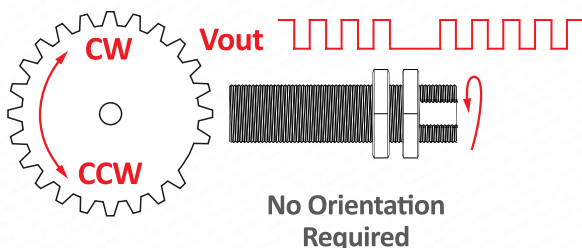
**HOUSING** -Aluminum, stainless steel, plastic, threaded, flange mount, customer specific

**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](https://sensorso.com)

### 'Target Tracker' No Orientation Required



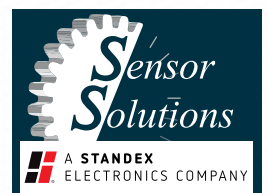
Type - DSO

#### DESCRIPTION

- Hall Effect Technology sensor for gear/ferrous target detection
- Detects 0-32 pitch gears, bolt heads, holes in steel plates, and other ferrous targets
- Single channel digital square wave output can resolve speed or count. For directional speed sensors, contact us.
- NPN goes low with ferrous metal present.
- Self-calibrating output reacts to both the leading and falling edge of any ferrous metal target
- No orientation required. Use lock nuts to set air gap within range of target

#### FEATURES

- Internal Hysteresis, Bounce Free
- Solid State (Nothing to wear out!)
- Temperature Stable
- Near 0 Speed Operation
- Dynamic, Self-Adjusting





# A12F-18ADSO-ODP23

## Single Ch-Target Tracker Gear Tooth Sensor

### TARGET SPECIFICATIONS NOTICE

Target Specifications are for detecting an end-sensed, 14.5 pressure angle, steel spur gear. The presence of ferrous metals or strong magnetic fields near the sensor's internal magnet may 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.

Note: for NPN sensors, off is a high signal, while PNP sensors off is a low signal. Additional gear tooth sensors are available. Check our website or contact us to compare all our gear tooth and single channel speed sensor options.

Electrical Specifications	Conditions	Min	Max	Unit
Temperature Range*	Operating	-40	+110*	Deg C
Supply Voltage, Vcc	Over temperature	+4.2	+24	Volts DC
Supply Current	Into Vcc	+1.5	+5	mA
Frequency Range	Near zero speed	0.1	15k	Hz
Saturation Voltage Low	I sink = 20 mA	0	0.6	Volts
Output Leakage Current	Output high	0	10	µA
Output Rise Time 10-90%	R pu = 1 k, C < 100pF	-	2.0	µS
Output Fall Time 90-10%	R pu = 1 k, C < 100pF	-	1.0	µS
ESD **	Nondestructive	-	2000	Volts
EMI **	20k to 1 G Hz	-	20	V / M

\* T max = 150°C is available, contact factory.  
\*\* CMOS IC is static sensitive.

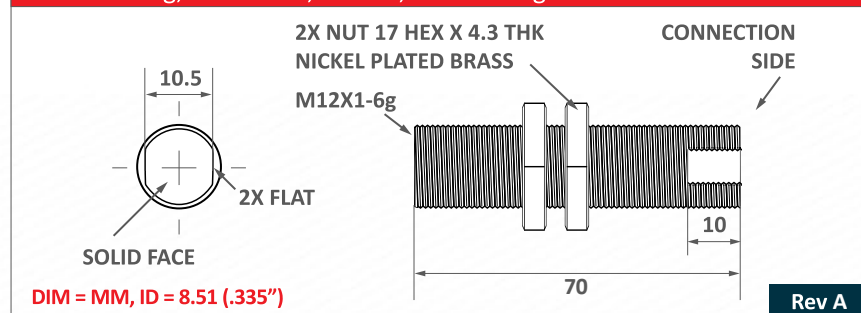
Rev E

Absolute Max Limits	Min	Max	Unit
Supply Voltage, Vcc at 25°C	-30	+30	Volts DC
Voltage Applied to Output	-0.3	+30	Volts
Current into Output	-	30	mA
Load Capacitance	-	0.01	µF
Current out of Output	-	n/a	mA
Load Dump, 40 mS Rs = 20	-	60	Volts

### Environmental Specifications

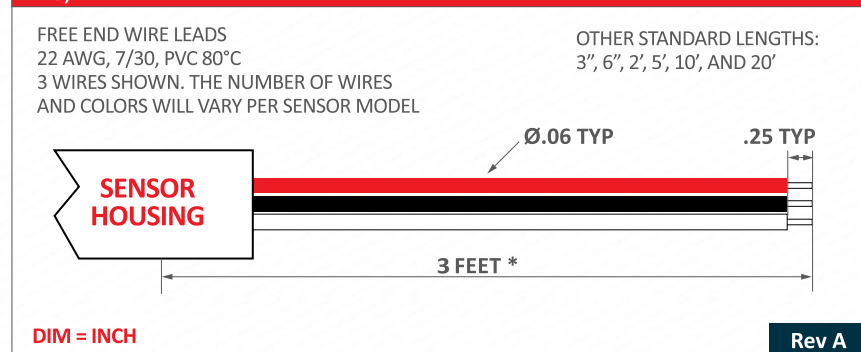
Corrosion Resistance	500 hours salt spray ASTM B-117
Installation Torque	13 Foot-Pounds Maximum
Enclosure	Nema 1,3,4,6,13 & IEC IP67
Vibration	10 G's 2 to 2000 Hz Continuous
Mechanical Shock	100 G's, 11 mS

### A12F Housing, Aluminum, M12x1, 70mm Long



Rev A

### P23, Free End PVC 22 AWG Wires



Rev A

Target Performance Gear Pitch ~ (#Teeth / Dia. in Inches)	Air Gap Range	Typ. Max Gap
4 (.785") Tooth to Tooth	.000 to .120"	.150"
8 (.393") Tooth to Tooth	.000 to .085"	.110"
12 (.262") Tooth to Tooth	.000 to .055"	.075"
100% tested before shipping		
16 (.196") Tooth to Tooth	.000 to .035"	.050"
20 (.157") Tooth to Tooth	.000 to .030"	.040"
24 (.131") Tooth to Tooth	.000 to .020"	.030"
32 (.098") Tooth to Tooth	.000 to .012"	.020"
Typical Output Duty Cycle	40 to 60%	
Alignment Skew Angle	360 Degrees	

### Connections Chart

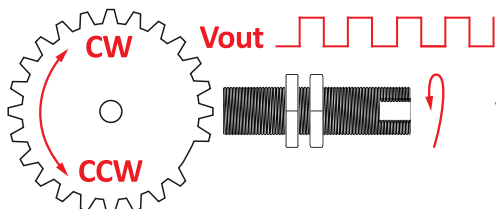
Red	Vcc	White	Digital Vout
Black	Ground		
P23-18ADSO			



# A12F-18ADSO-ODP23

## Single Ch-Target Tracker Gear Tooth Sensor

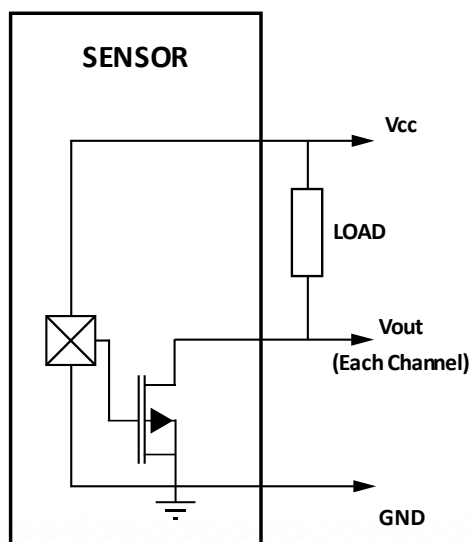
### Sensor Function



**THIS SENSOR WORKS WITH ANY ORIENTATION!**

A12F-18ADSO

### OD, Open Drain N Channel



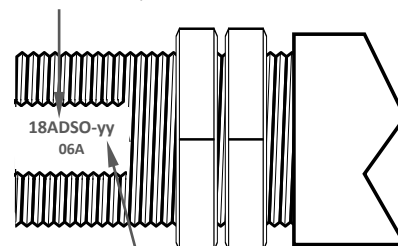
### Date Code 'YYM'

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

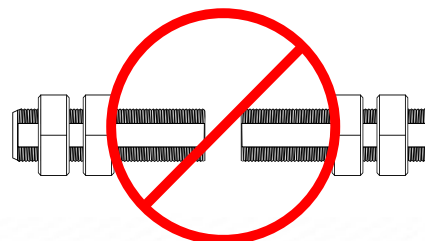
DATE CODE, THIS SURFACE



CHARACTERISTIC-OPTION MARKED ON THIS SURFACE YY = OPTION

### Handling Instructions

**DO NOT CONTACT  
FACE TO FACE**



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

Please note: All technical specifications on this series datasheet refer to the standard product range. Modifications in the sense of technical progress are reserved. For general information only. For more specific information, please consult the product datasheet, available upon request.

This series datasheet could contain technical inaccuracies or typographical errors. Changes are periodically made to the information herein. These change will be incorporated in future revisions.

For deviating values, most current specifications and products please contact your nearest sales office.