

S12-18ADSO-5KCB2

Single Ch-Target Tracker Gear Tooth Sensor

- Dynamic Speed Sensor
- No Orientation Required
- NPN output with 5k pull up resistor
- Stainless 12x1mm x 35mm housing
- Integral 4 pin male 12mm micro connector



CUSTOMER FOCUSED ENGINEERING + MODULAR DESIGN

Part Description: **S12-18ADSO-5KCB2**

Housing	Sensor Type & Function	Electrical Option	Connection Type
S = Stainless Steel, Thread Pitch M12x1, 35mm Long	Digital Single Output Gear Tooth Sensor	NPN, 5k Pull Up Resistor	CB2 = Integral 4 Pin Male 12mm Micro Connector

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

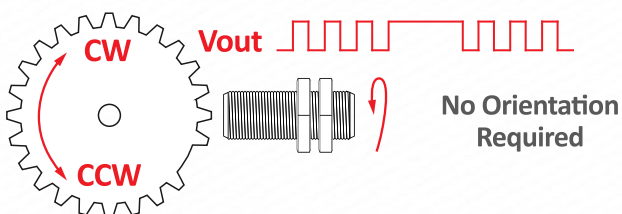
HOUSING - Aluminum, stainless steel, plastic, threaded, flange mount, customer specific

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://www.sensorso.com)

'Target Tracker' No Orientation Required



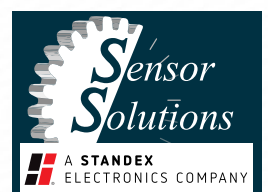
Type - DSO

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 output 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



S12-18ADSO-5KCB2

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.

These sensors power up with the output transistor OFF (Vout High). This transistor turns ON (Vout Low) for the first time on the approach of a tooth. After the first tooth, they will not miss a target.

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, Output Off	Into Vcc	+1.5	+5	mA
Frequency Range	Near zero speed	0.1	15k	Hz
Saturation Voltage Low, Vol	I sink = 20 mA	0	0.6	Volts
Output Voltage High, Voh	Vcc = 12, Rload > 100Ω	105	120	Volts
Internal Pull Up Resistor	Vcc to Vout	4.9	5.1	K Ohms
Output Rise Time 10-90%	C < 100pF	-	3.0	μS
Output Fall Time 90-10%	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.

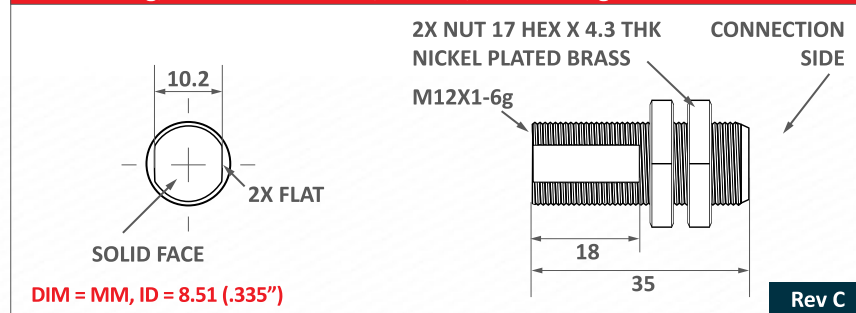
Rev B

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	uF
Current Out of Output	-	Vcc/5k	mA
Load Dump, 40 mS Rs = 20	-	60	Volts

Environmental Specifications

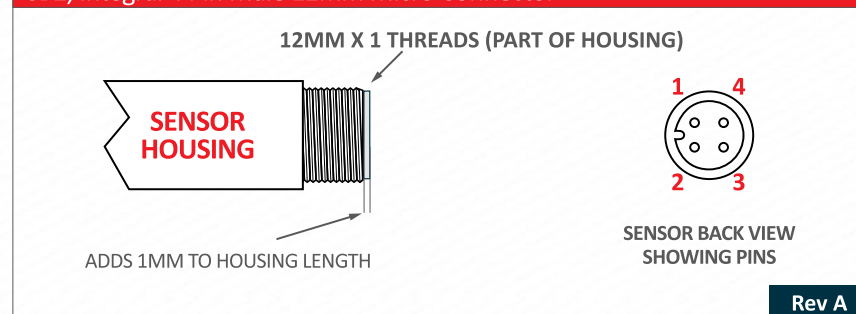
Corrosion Resistance	500 hours salt spray ASTM B-117
Installation Torque	23 Foot-Pounds Maximum
Enclosure	Nema 1,3,4,6,13 & IEC IP67
Vibration	10 G's 2 to 2000 Hz Sinusoidal
Mechanical Shock	100 G's, 11 mS Half-Sine

S12 Housing, 303 Stainless Steel, M12X1, 35mm Long



Rev C

CB2, Integral 4 Pin Male 12mm Micro Connector



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

Pin 1	Vcc	Pin 3	Ground
Pin 2	n/c	Pin 4	Digital Vout

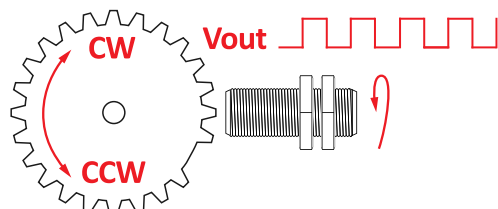
CB2-18ADSO

OTHER MATING CONNECTORS AND CABLE SETS AVAILABLE

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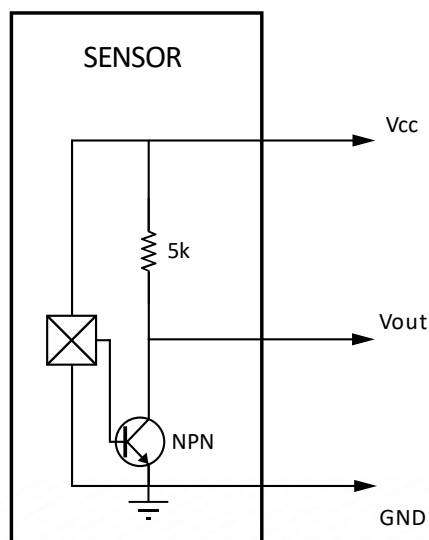
Sensor Function



**THIS SENSOR
WORKS WITH ANY
ORIENTATION!**

S12-18ADSO

5K, 5k Pull-up Resistor



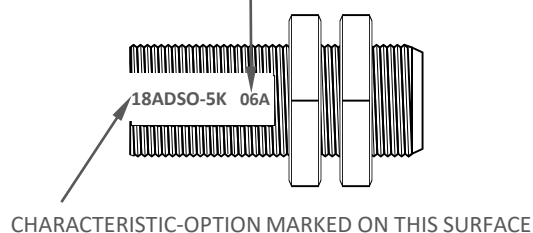
Date Code 'YYM'

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

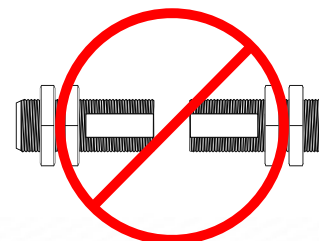
Marking

DATE CODE, THIS SURFACE



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.

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