

MFM7-37ADSO-P5P21

Single Ch-Target Tracker Gear Tooth Sensor

- Dynamic Speed Sensor
- No Orientation Required
- PNP output with 5k resistor
- Plastic .7" flange mount 1.5" long housing
- Free end PVC 22 AWG wires (1 foot length)



CUSTOMER FOCUSED ENGINEERING + MODULAR DESIGN

Part Description: **MFM7-37ADSO-P5P21**

Housing	Sensor Type & Function	Electrical Option	Connection Type
Glass Filled Nylon Flange Mount $\varnothing .7"$ x 1.5" Long	Digital Single Output Gear Tooth Sensor	PNP, 5k Resistor	P21 = Free End PVC 22AWG Wires

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

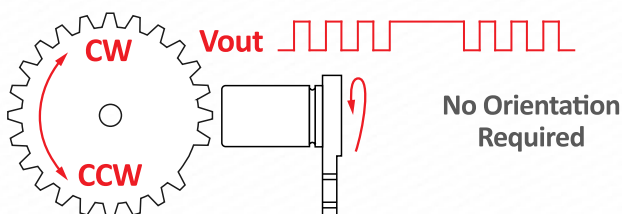
HOUSING - Aluminum, stainless steel, plastic, threaded, flange mount, customer specific

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://www.sensorso.com)

'Target Tracker' No Orientation Required



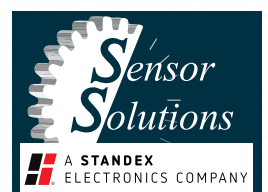
Type - DSO

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.
- PNP goes high with ferrous metal present.
- Self-calibrating output reacts to both the leading and falling edge of any ferrous metal target
- Easy install Flange mount design sets gap relative to target face

FEATURES

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



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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	+5	+24	Volts DC
Supply Current, Output Off	Into Vcc, Vcc = 24V	+1.5	+5	mA
Frequency Range	Near zero speed	0.1	15k	Hz
Saturation Voltage High	Vcc = 24V, Rpu >10k	23.5	24	Volts
Saturation Voltage Low	Vcc = 24V, Rpu >10k	0.1	0.5	Volts
Internal Pull Up Resistor	Vcc to Vout	none	none	kohms
Output Resistance Ro	0.25 watts	48	52	Ohms
Output Rise Time 10-90%	Co < 100pF	-	8.0	µS
Output Fall Time 90-10%	Co < 100pF	-	2.0	µS
ESD **	Nondestructive	-	2000	Volts
EMI **	20k to 1 G Hz	-	100	V / M

* T max = 150°C is available, contact factory.

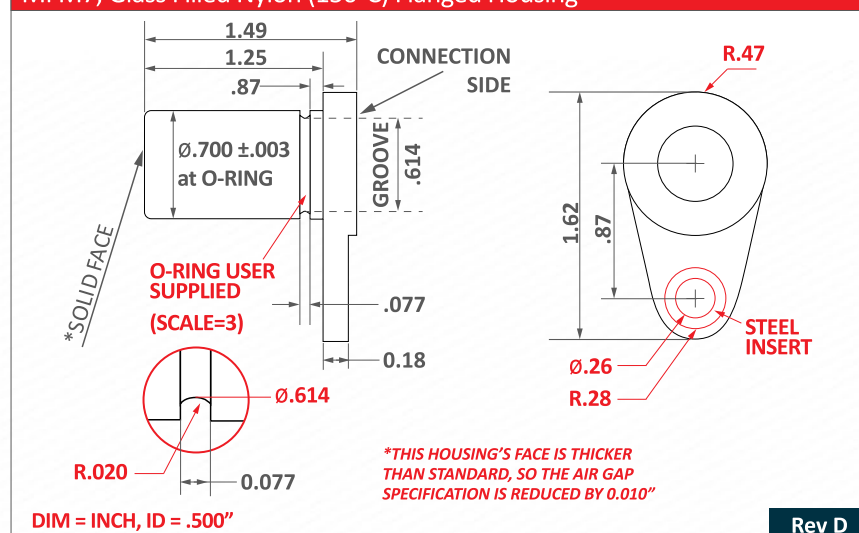
Rev B

Absolute Max Limits	Min	Max	Unit
Supply Voltage, Vcc	-28	+28	Volts DC
Voltage Shorted to Output 1 Minute Max	-12	+28	Volts
Current into Output, T=25°C	-	40	mA
Load Capacitance	-	0.01	µF
Current Out of Output	-	n/a	mA
Load Dump, 100 mS Rs = 5 per ISO 7637-2 24V Truck Spec	-	200	Volts

Environmental Specifications

Corrosion Resistance	500 hours salt spray ASTM B-117
Installation Torque	15 Foot-Pounds Maximum
Enclosure	Nema 1,3,4,6,13 & IEC IP67
Vibration	10 G's 10 to 2000 Hz Sinusodal
Mechanical Shock	50 G's, 11 mS Half-Sine

MFM7, Glass Filled Nylon (150°C) Flanged Housing



Rev D

Target Performance Gear Pitch ~ (#Teeth / Dia. in Inches)	Air Gap Range	Typ. Max Gap
4 (.785") Tooth to Tooth	.000 to .180"	.240"
8 (.393") Tooth to Tooth	.000 to .125"	.180"
12 (.262") Tooth to Tooth 100% tested before shipping	.000 to .070"	.105"
16 (.196") Tooth to Tooth	.000 to .050"	.070"
20 (.157") Tooth to Tooth	.000 to .030"	.055"
24 (.131") Tooth to Tooth	.000 to .020"	.040"
32 (.098") Tooth to Tooth	.000 to .008"	.020"
Typical Output Duty Cycle	40 to 60%	
Alignment Skew Angle	360 Degrees	

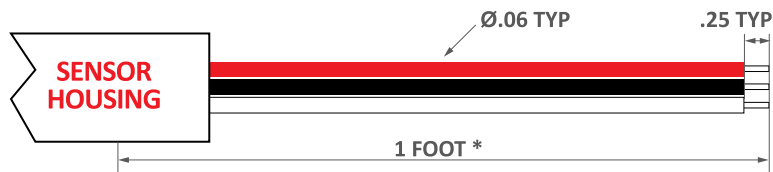
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P21, Free End PVC 22 AWG Wires

FREE END WIRE LEADS
22 AWG, 7/30, PVC 80°C
3 WIRES SHOWN. THE NUMBER OF WIRES
AND COLORS WILL VARY PER SENSOR MODEL

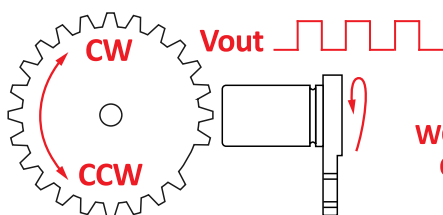
OTHER STANDARD LENGTHS:
3", 6", 2', 5', 10', AND 20'



DIM = INCH

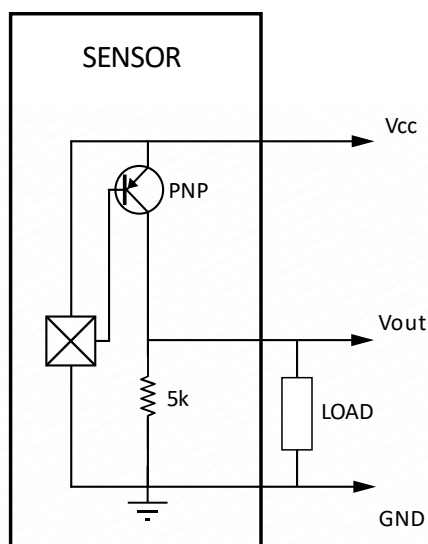
Rev A

Sensor Function



MFM7-37ADSO

P5, PNP with 5k Resistor



Connections Chart

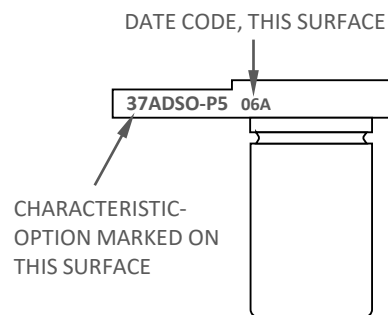
Pin A	Vcc	Pin C	Ground
Pin B	Vout		

P21-37ADSO

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

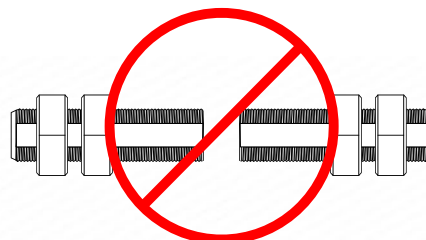
A JAN	D APR	H JUL	L OCT
B FEB	E MAY	J AUG	M NOV
C MAR	G JUN	K SEP	N DEC

Marking



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.