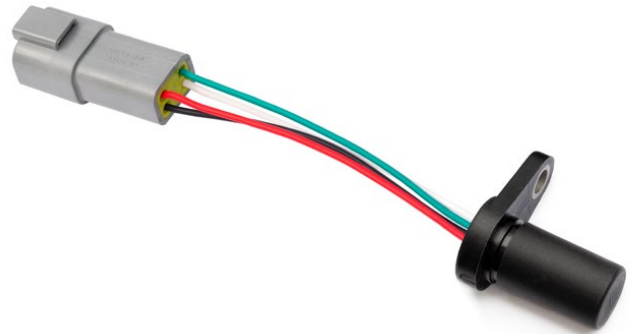


MFM7-APS180-LACD4

Angular Position Sensor

- Programmed 0-180 degree angular position sensor
- Regulated & load dump protected input
- Analog output
- Plastic .7" flange mount 1.5" long housing
- Deutsch DT04 4 pin with 5" 20 AWG XLPE



CUSTOMER FOCUSED ENGINEERING + MODULAR DESIGN

Part Description: **MFM7-APS180-LACD4**

Housing	Sensor Type & Function	Electrical Option	Connection Type
Glass Filled Nylon Flange Mount Ø.7" x 1.5"	Angular Position Sensor Output Over 180° of Rotation	Linear Analog Output	Deutsch DT 4 pin w/5" 20AWG XLPE

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

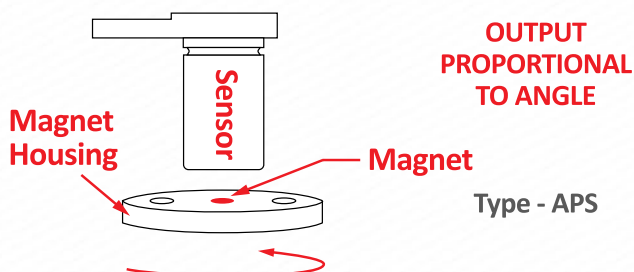
HOUSING - Aluminum, stainless steel, plastic, threaded, flange mount, customer specific

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)

'Angular Position Sensors' Sensor and Target Sold Separately

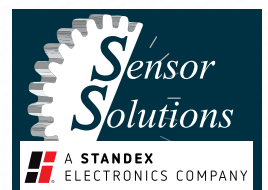


DESCRIPTION

- Sensor provides 0-5V analog output over 180 degrees of rotation.
- Non-contact sensor detects marked magnet to define orientation.
- Load dump protected circuit operates from 8-32VDC
- Ratiometric output to internal 5V regulator, analog ref. output wire can be connected for regulator tolerance.
- Operate gap range dependent on target magnet, refer to specifications chart for magnet options and gap ranges.
- Flange mount installation ensures proper orientation and gap from target.
- 0-5V over other angular ranges available, contact Sensor Solutions.

FEATURES

- Non Contact
- Resistant to Shock & Vibration
- Linear Voltage Output
- Output Over 180 Degrees of Rotation
- 5V or Regulated Versions



MFM7-APS180-LACD4

Angular Position Sensor

TARGET SPECIFICATIONS NOTICE

The "Discontinuity Point" is the angle where the output changes from 0V to 5V. This is intentionally programmed to be as far away from the actual Linear Range as possible. With this, if the magnet goes past 0 degrees the output stays 0V; and if it goes past 180 degrees the output stays 5V.

Note: Check our website or contact us to compare all our angular position sensors.

Electrical Specifications	Conditions	Min	Typ	Max	Unit
Temperature Range*	Operating	-40	-	+110*	°C
Supply Voltage, Vcc	For specified accuracy	+8	-	+32	VDC
Supply Current	Into Vcc, RI > 10k	+8	+10	+16	mA
Recommended Load-Gnd	Allows max output swing	-	> 100k	Inf.	Ohms
Analog Sat. Voltage Low	RI > 100k, Vcc = 24V,	-	.010	.050	Volts
Analog Sat. Voltage High	RI > 100k, Vcc = 24V,	4.900	4.960	-	Volts
Power Up Time	Any Angle	-	12	15	mS
Sampling Rate, Slow Mode	Factory Standard	-	600	-	µS
Sampling Rate, Fast Mode	High Speed Option	-	200	-	µS
Step Response Time, Slow	Factory Standard	-	-	4.0	mS
Step Response Time, Fast	High Speed Option	-	400	600	µS

ANALOG Vout SPECS AT Vcc = 24V, See graph below.

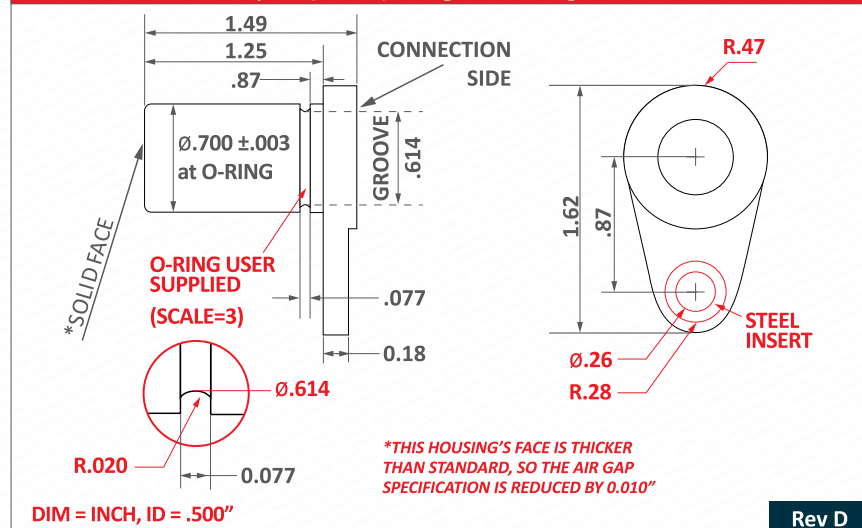
Vout @90° Angle, Final Test Fixture	100% test, room temp .35" gap	2.400	2.500	2.600	Volts
Slope in Linear Range	From 2 to 178 Degrees	26.7	27.78	28.9	mV/Deg
Linearity Error	2-178 Deg, Accurate Gap Range	-1	.2	+1	%
Overall Error to +5V out **	2-178 Deg, Accurate Gap Range	-5	±2	+5	Deg
Overall Error to +5V out **	2-178 Deg, Ext. Gap Range	-7	±4	+7	Deg
Discontinuity Point	Programmed at Factory	250	270	290	Deg

* 125°C max available, HIGH TEMP upgrade, contact factory.

** Ratio metric to 5V output, contact factory for details.

Rev A

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



Rev D

Absolute Max Limits	Min	Max	Unit
Supply Voltage, Vcc	-35	+35	Volts DC
Voltage Applied to Output	-0.3	5	Volts
Current Into/Out of Output	-30	+30	mA
Magnetic Flux Density	-7000	+7000	Gauss
Load Dump Surge, 100 mS	-	200	Volts
Rs = 25 ISO 7637			

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 Sinusoidal
Mechanical Shock	50 G's, 11 mS Half-Sine

Magnetic Characteristics

Outputs will respond outside of the denied ranges, but with reduced accuracy

Air Gap Range: Raw NEO Magnet Part # 300-01-071	.050"	.225"	.375"
Air Gap Range: Raw SmCo Magnet Part # 300-04-021	.050"	.100"	.150"
Air Gap Range: Raw SmCo Magnet Part # 300-04-022	.100"	.150"	.200"

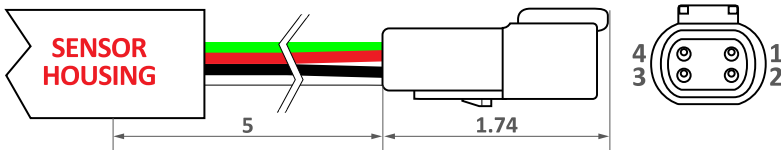
MFM7-APS180-LACD4

Angular Position Sensor

CD4, 4 Pin Deutsch DT04 w/5" 20 AWG TXL

CONNECTOR: AMPHENOL AT04-4P-RD01 BODY OR
DEUTSCH DT04-4P-C015 BODY
CONTACTS: 4 DEUTSCH PINS, PN 1060-16-0622
WIRE: 20AWG, 19/32, XLPE TXL, 125°C

PIN 1 = RED
PIN 2 = BLACK
PIN 3 = WHITE
PIN 4 = GREEN



DIM = INCH

Rev B

Connections Chart

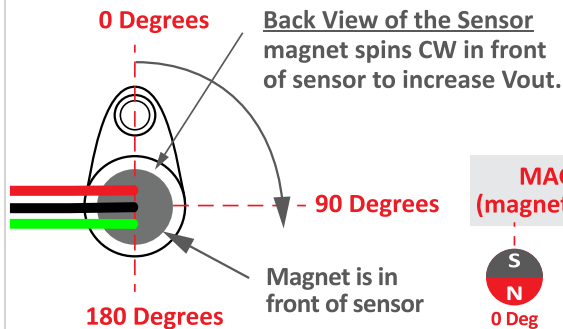
Pin 1 (Red)	Vcc	Pin 3 (White)	+5V Ref.
Pin 2 (Black)	Ground	Pin 4 (Green)	Analog Vo

CD4-APS180



Caution: A short from the Pin 3 (White) +5V wire to either Pin 1 (Red) Vcc or Pin 2 (Black) Ground wire will cause component failure.

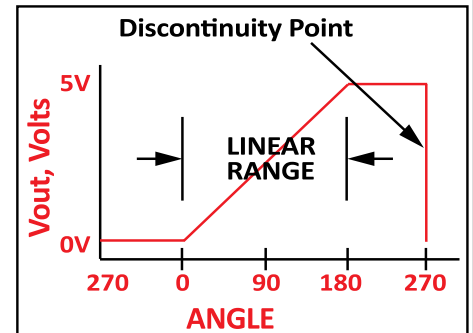
Sensor Function



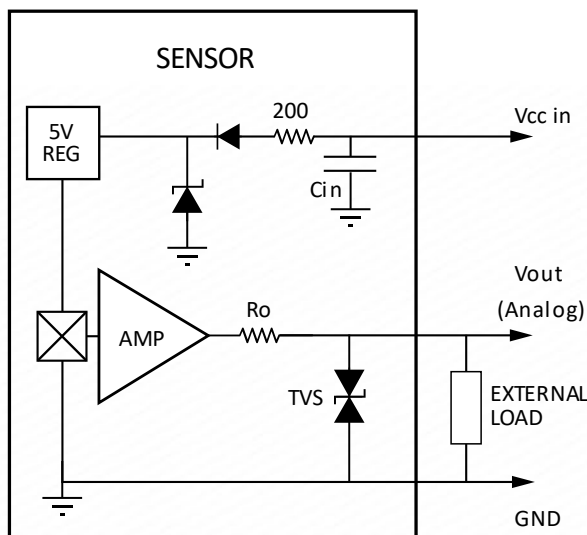
MFM7-APS180

Air Gap

MAGNET ANGLE DEFINED
(magnet rotates, housing is fixed)



LA, Protected Input, Analog Output

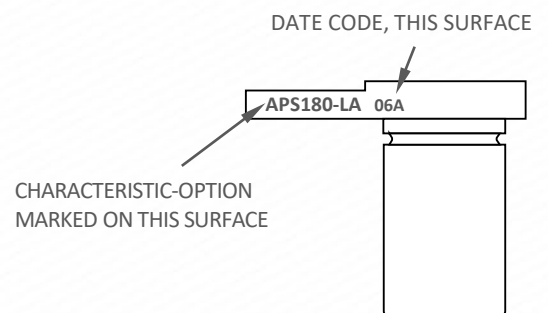


Date Code 'YYM'

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



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.