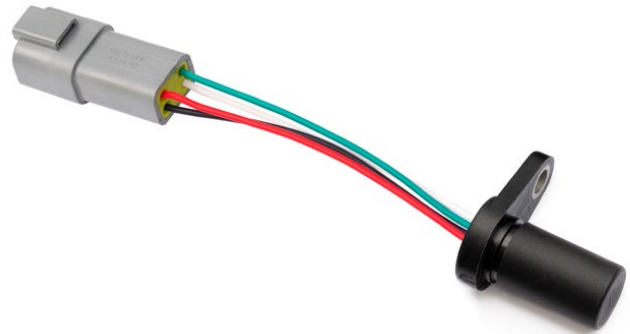# MFM7-275VPD-RGCD4
Digital Ferrous Metal Detection Sensor

➢ **Ferrous Metal Hall Proximity Sensor**

➢ **.375" detection gap**

➢ **Regulated input, 0-5V 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: **M F M 7 - 2 7 5 V P D - R G C D 3**

Housing	Sensor Type & Function	Electrical Option	Connection Type
Glass Filled Nylon Flange Mount ∅.7" x 1.5"	Digital Ferrous Metal Proximity Sensor	Regulated Input 0-5V Digital 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*

'Digital Output switches on when Ferrous Metal is present'

OUTPUT ON (LOW)

OUTPUT OFF (HIGH)

Type - DP
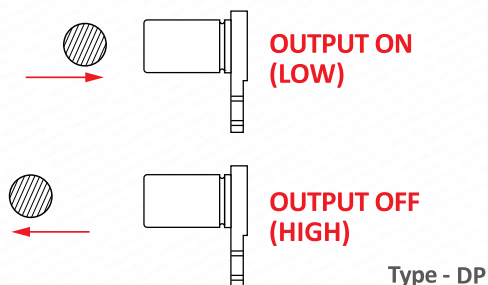
DESCRIPTION

• Digital output turns on when ferrous metal is detected
• Programmed to detect a large steel target at 0.375"
• Target detection gap is dependent on shape/size/ferrous content.
• Custom programming available for precision repeatable detection of targets, contact Sensor Solutions.
• Flange mount installation sets fixed gap from target.

FEATURES

• True Zero Speed
• Large Detection Gap
• Internal Hysteresis
• Detects Through Aluminum

Sensor Solutions
A STANDEX ELECTRONICS COMPANY
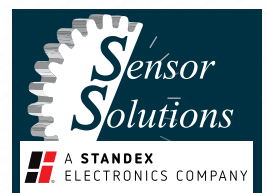
MFM7-275VPD-RGCD4
Digital Ferrous Metal Detection Sensor

Note: Check our website or contact us for details on all our ferrous metal detection options.

Electrical Specifications	Conditions	Min	Max	Unit
Temperature Range*	Operating	-40	+110*	Deg C
Supply Voltage, Vcc	Over temperature	+8.0	+30	Volts DC
Supply Current, Output Off	Into Vcc	(typ 8)	+12	mA
Output Current	Continuous	-1	+1	mA
Load Capacitance	Cable and Load	n/a	+1.0	µF
Frequency Range **	Std Programmable	0	500	Hz
Frequency Range **	Max Programmable	0	2000	Hz
Digital Voltage Low Vol	I sink < 1.0 mA	0	(typ 0.2)	Volts
Digital Voltage High Voh	I source < 1.0 mA	4.60	5.5	Volts
Output Rise Time 10-90%	Ro=10k, C<100 pF	-	5	µS
Output Fall Time 90-10%	Ro=10k, C<100 pF	-	5	µS

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

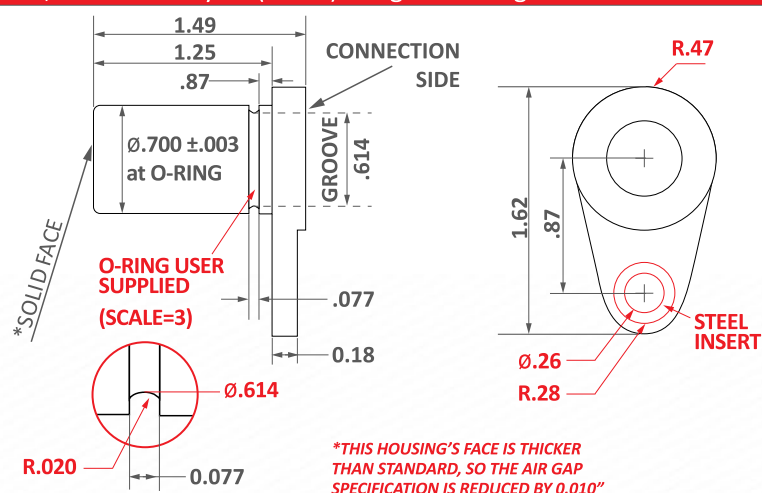** Frequency, Detection and Hysteresis are Factory Programmable.   **Rev D**

Absolute Max Limits	Min	Max	Unit
Supply Voltage, Vcc	-24	+30	Volts DC
Voltage at Output	-5	+8.5	Volts
Reverse Supply Current	-	5.0	mA
Peak Output Current	-10	+10	mA
Vout Short Circuit Duration	-	10	Minutes

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

1.49
1.25
.87
CONNECTION SIDE
R.47
Ø.700 ±.003 at O-RING
GROOVE .614
*SOLID FACE
O-RING USER SUPPLIED (SCALE=3)
.077
0.18
Ø.614
R.020
0.077
1.62
.87
Ø.26
R.28
STEEL INSERT

*THIS HOUSING'S FACE IS THICKER THAN STANDARD, SO THE AIR GAP SPECIFICATION IS REDUCED BY 0.010"

DIM = INCH, ID = .500"   **Rev D**

Functional Characteristics @25°C	Min	Typ	Max
Sensor Programming + target ferrous content, shape, & size will affect gaps			
Output State, No Target Present:			Low (~0V)
Detect Large Steel Target T=25C**	0.350"	0.375"	0.400"
Hysteresis, Large Steel Target T=25C**	.020"	.050"	.080"
Detect 0.5" ø Steel Target	-	.360"	-
Detect 0.1" ø Steel Target	-	.215"	-

** Frequency, Detection and Hysteresis are Factory Programmable and can be decreased upon request.
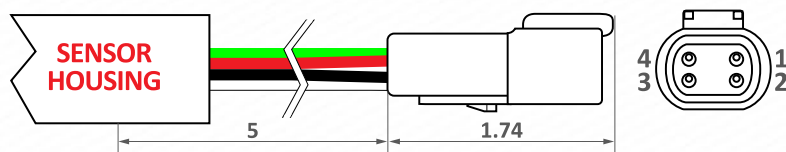
CD4, 4 Pin Deutsch DT04 w/5" 20 AWG TXL

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

SENSOR HOUSING
5
1.74
4 3 1 2

DIM = INCH   **Rev B**

Connections Chart

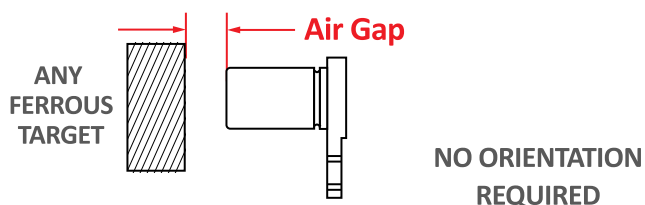| Pin 1 (Red)	Vcc	Pin 3 (White)	Digital Vout
Pin 2 (Black)	Ground	Pin 4 (Green)	Program, No Connect
CD4-275VPD			

Caution: *A short from the Pin 4 (Green) Program wire to either Pin 1 (Red) Vcc or Pin 2 (Black) Ground wire will cause component failure.*

MFM7-275VPD-RGCD4
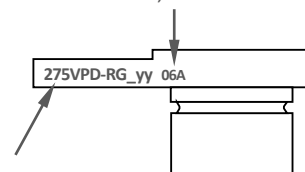## Digital Ferrous Metal Detection Sensor

Sensor Function

ANY
FERROUS
TARGET

Air Gap

NO ORIENTATION
REQUIRED

MFM7-275VPD

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

275VPD-RG_yy   06A

CHARACTERISTIC-OPTION_PROGRAMMING MARKED
ON THIS SURFACE   yy = PROGRAM #

RG, Linear Regulator

SENSOR

5V REG

8 TO 30V

Vout 0-5V
(Each Channel)

LOAD

GND
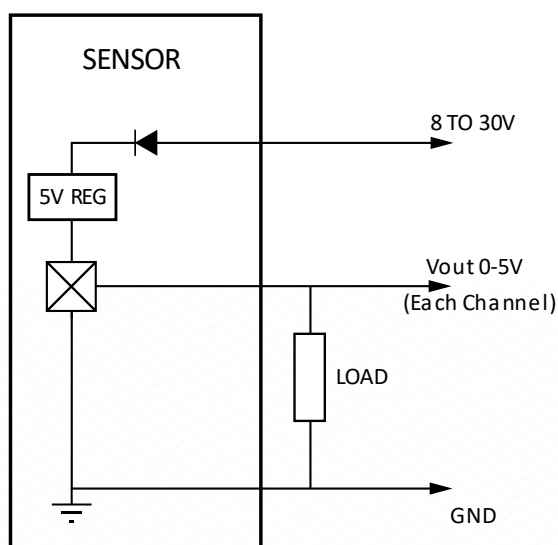
Handling Instructions

DO NOT CONTACT
FACE TO FACE
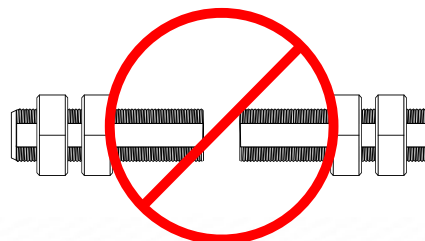
CONTACT WITH OTHER MAGNETS _MAY_
REDUCE THE MAXIMUM OPERATING GAP