

## Premium Magnetic Pickups

These pickups are suited for harsh environments and years of reliable service. They are hermetically sealed for resistance to moisture and other atmospheric contamination and can withstand repeated thermocycling in temperatures ranging from -450°F to 450°F. These pickups are also being used in cryogenics for their ability to operate dependably at extremely low temperatures for long periods of time. Features like glass sealed connectors, unique internal potting, and high quality magnets that resist demagnetization, make these pickups the best choice for demanding environments.

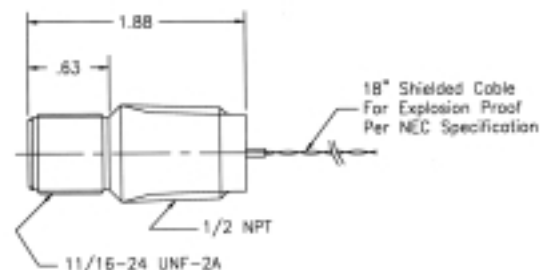
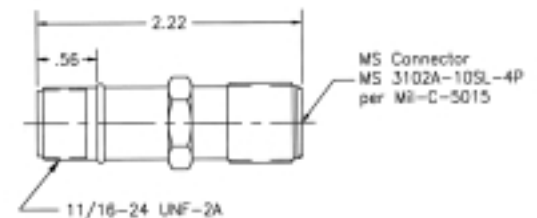
These pickups are available in standard and ruggedized grades. Ruggedized pickups undergo a internal construction process that enables them to better tolerate rigorous conditions that would cause other pickups to fail (e.g. excessive vibrations, impact and repeated thermocycling).



### Standard Features and Specifications

- Variable reluctance or inductive type
- Hermetically sealed, heli-arc welded construction
- 2 pin, gold plated, glass sealed connector  
(mate:MS3106-10SL-4P)
- 300 stainless steel housing (locknut included)
- Magnet that resists demagnetization
- Unique potting that compensates for temperature extremes
- Temperature range -450°F to 450°F (-270°C to 232°C)
- IR leakage: 100 megaohms @ 100 Vdc minimum
- High signal output
- High shock and vibration resistance  
(impact: 25G's min.; vibration: 2G's at 2000 Hz min.)

### Dimensions:



### Ordering Information

	Model No.	Resistance (Ohm)	Inductance (Henry)	Gauss Strength
Standard Drag	PC24-120G	1800	1.3	850
Low Drag	PC24-143G	1380	1.6	150/350
Inductive	PC3-24G	5000	30	N/A

In addition to the above-specified pickups, Flowmetrics can make these pickups in other lengths, configurations, mounting thread as well as with options like pigtail lead, NPT thread for explosion proof applications, etc.

# Humbucking Magnetic Pickups

Humbucking pickups are dual coil versions of premium series pickups and feature the same materials and construction methods. These pickups offer very high resistance to electrical interference with little or no loss in signal strength.

Humbucking pickups must be used with differential amplifier to condition and isolate the signal and eliminate unwanted electrical interference. They have the ability to cancel out most extraneous noise that is generated by motors, pumps, overhead lines or other electrical devices that often create signal problems.

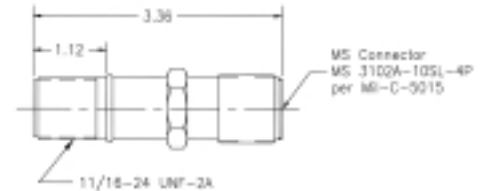
Humbucking pickups are available in standard and low drag versions and can be customized to satisfy specific requirements including gauss strengths, hermetic sealing, mounting threads, interconnection type, pickup housing shape/length, etc.



## Standard Features and Specifications

- Variable reluctance or inductive type
- Magnet that resists demagnetization
- 300 stainless steel housing (locknut included)
- 2 pin, gold plated, glass sealed connector
- (mate:MS3106-10SL-4P)
- Hermetically sealed, heli-arc welded construction
- Wide temperature range -450°F to 450°F (-270°C to 232°C)
- High signal output
- IR leakage: 100 megaohms @ 100 Vdc minimum
- Shock and vibration resistant  
(impact: 25 G's min.; vibration: 2 G's at 2000 Hz min.)

## Dimensions:



## Ordering Information

	Model No.	Resistance (Ohm)	Inductance (Henry)	Gauss Strength
Standard Drag	PC24-128G	3600	2.2	850
Low Drag	PC24-85G	2800	3	350

# Intrinsically Safe Magnetic Pickups

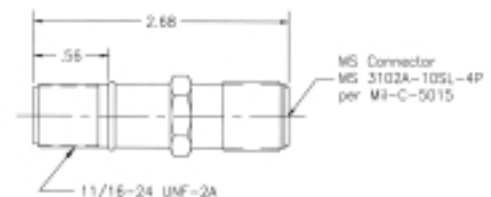
Intrinsic safety is an increasingly popular approach for a large number of customers. Our certification allows us to make intrinsically safe versions of almost any pickup we offer. Intrinsically safe pickups certified by CSA (with NRTL/C) and CENELEC for the most stringent hazardous locations (listed below).

Intrinsically safe models feature high quality construction and materials. Configurations can be customized to satisfy specific requirements including gauss strengths, hermetic sealing, mounting threads, interconnection type, pickup housing shape/ length, etc.

## Standard Features and Specifications

- variable reluctance or inductive type
- 300 stainless steel housing
- 2 pin connector (mate:MS3106-10SL-4P)
- temperature range -54°F to 364°F (-65°C to 175°C)
- shock and vibration resistant
- IR leakage: 100 megaohms @ 100 Vdc minimum
- certified intrinsically safe to CSA (with NRTL/C) and CENELEC
- suitable for class I, Zone 0, IIC and Ex ia IIC T6 hazardous locations
- If equipped with MS connector, all units are suitable for class I, Div I, Group ABCD, and Class II Div I, Group G, Class III & coal dust
- If equipped with NPT/pigtail lead combinations, all units are suitable for Class I, Div. I, Group A,B,C,D, and Class II, Div I Group E, F, G, Class III
- Entity Parameters:  
Vmax/Ui = 30Vdc; Imax/li = 300 mA  
Ci = OuF; Li = OmH

## Dimensions:

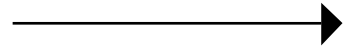


## Ordering Information

	Model No.	Resistance (Ohm)	Inductance (Henry)	Gauss Strength
Standard Drag	PC45-1G	1800	N/A	850
Low Drag	PC45-5G	1380	N/A	150/350
Inductive	PC45-2G	5000	N/A	N/A

In addition to the above-specified pickups, Flowmetrics can make these pickups in other lengths, configurations, mounting thread as well as with options like pigtail lead, NPT thread for explosion proof applications, etc.

# High Temperature Magnetic Pickups



High temperature pickups were designed to operate reliably in high temperature environments for long periods of time. These pickups can easily withstand repeated thermocycling and feature an operating temperature range of -450°F to 850°F and 1000°F intermittently.

Signal lead wires are protected by a flexible stainless steel braided sheath that can withstand exposure to 1000°F (542°C). Special materials and construction prevent damage from physical abuse and thermal shock. In addition, all High Temperature Magnetic Pickups are hermetically sealed.

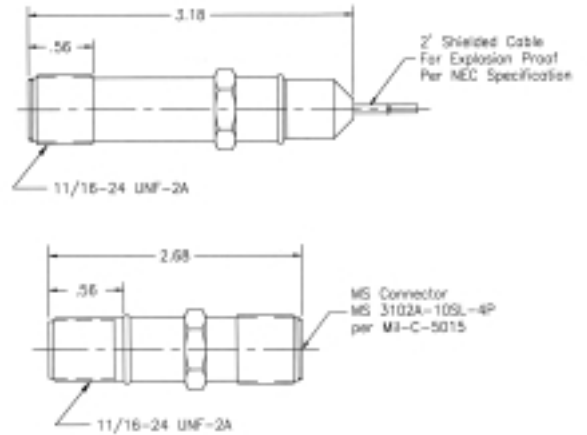
Configurations can be customized to satisfy specific requirements including gauss strengths, mounting threads, cable length, pickup housing shape/length, etc.



## Standard Features and Specifications

- Variable reluctance or inductive type
- 300 stainless steel housing (locknut included)
- 2 pin, gold plated, glass sealed connector  
(mate:MS3106-10SL-4P)
- Temperature range -450°F to 850°F (-270°C to 458°C)
- 2 Foot stainless steel overbraided lead
- Hermetically sealed, heli-arc welded construction
- Unique potting that compensates for temperature extremes
- Magnet that resists demagnetization
- High signal output
- IR leakage: 50 megaohms @ 50 Vdc minimum
- Shock and vibration resistant  
(impact: 25 G's min.; vibration: 2 G's at 2000 Hz min.)

## Dimensions:

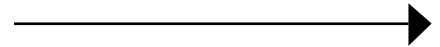


## Ordering Information

	Model No.	Resistance (Ohm)	Inductance (Henry)	Gauss Strength
Standard Drag	PC28-13G	120	.1	1050
Low Drag	PC28-14G	180	.25	200
Inductive	PC23-16G	250	1.2	N/A

In addition to the above-specified pickups, Flowmetrics can make these pickups in other lengths, configurations, mounting thread as well as with options like pigtail lead, NPT thread for explosion proof applications, etc.

# Modulated Carrier (RF) Pickups



Modulated carrier (RF) pickups require coupling with our PA 1001A Series preamp or other modulated carrier amplifiers. When used with the PA1001A preamplifier, they offer square wave output, low speed response, no drag and large air gaps. They also have the ability to sense non ferrous metals like aluminum and stainless steel, in addition to ferrous metals.

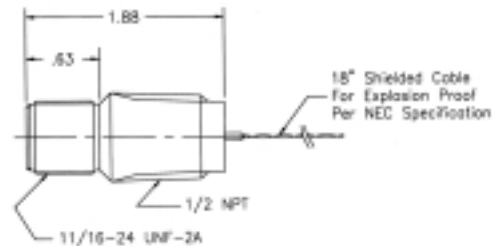
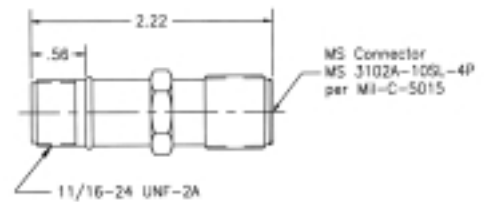
RF pickups are becoming increasingly popular in applications such as turbine flowmetering where it is important to sense small, free spinning devices without including drag on the movement on the rotor. Standard versions of RF pickups have open fronts and are epoxy encapsulated. Models with closed fronts and hermetically sealed versions are also available.



## Standard Features and Specifications

- Modulated carrier type
- 300 series stainless steel enclosure
- Epoxy encapsulation
- 2 pin gold plated connector  
(mate: MS3106-10SL-4P)
- Inductance: 1mH  $\pm$  10%
- DC resistance 10.5 ohms  $\pm$  10%
- IR leakage: minimum of 50 megaohms @ 50 Vdc
- Temperature range -100°F to 400°F (-74°C to 204°C)
- High shock and vibration resistant  
(impact: 25 G's min.; vibration: 2 G's at 2000 Hz min.)

## Dimensions:



## Ordering Information

Model No.	Comments
RF-1	2 pin connector
RF-1EX	Explosion proof

In addition to the above-specified pickups, Flowmetrics can make these pickups in other lengths, configurations, mounting thread as well as with options like pigtail lead, NPT thread for explosion proof applications, etc.

# Intrinsically Safe (RF) Pickups

Our CSA and CENELEC certified intrinsically safe RF (modulated carrier) models feature the same high quality construction, specifications as our standard RF series. Configurations can be customized to satisfy specific requirements including hermetic sealing, mounting threads, interconnection type, pickup housing shape/length, etc. Intrinsically safe RF pickups are suitable for Class I, Zone 0, IIC and T6 hazardous locations.

## Entity Parameters:

$V_{max}/U_i=30Vdc$ ;  $I_{max}/I_i=300mA$   
 $C_i/C_i=OuF$ ;  $L_i/L_i=1.2mH$

## Hazardous Locations:

Class I, Div 1, Group A,B,C,D  
 Class II, Div, Group G. Class III  
 & coal dust

## with pigtail lead:

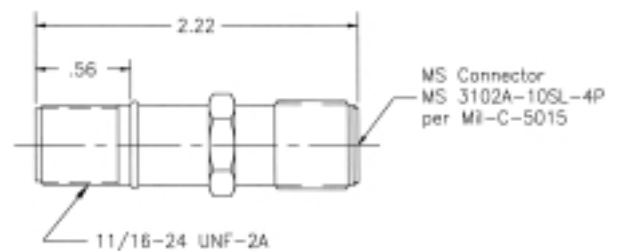
Class I, Div 1, Group A,B,C,D  
 Class II, Div, 1, Group E,F,G  
 Class III



## Ordering Information

Model No.	Resistance (Ohm)	Inductance (Henry)
RF10-1	10.5	1

## Dimensions:



# High Temperature RF Pickups (RF) Pickups

High Temperature RF pickups are built to operate in ranges beyond that of our standard RF pickups. These pickups operate in a broad temperature range of -100°F to 750°F (-74°C to 400°C). High Temperature RF pickups come with 2 foot shield cables to allow interconnection without the need for expensive mating connectors. configurations can be customized to satisfy specific requirements including mounting threads, interconnection type, pickup housing shape/length, etc.

## Ordering Information

Model No.	Resistance (Ohm)	Inductance (Henry)	Comments
RF5	28	2	Explosion Proof
RF11	28	2	2 Pin connector



## Dimensions:



# Digi-Pulse Magnetic and RF Pickups

Digi-Pulse pickups with digital output offer a low cost solution for interfacing directly to data acquisition systems. These pickups integrate a preamplifier/signal conditioner with the pickup housing and offer the advantages of excellent noise immunity and greater transmission capability. Input power supply requirements cover the most popular ranges for both commercial and industrial use.

The output signal of these pickups have a square pulse wave from, the frequency of the signal directly relates to the number of turbine blades, gear teeth, etc. that have been sensed by the pickup. These pulses, in turn, can be correlated to determine flow rate, RPM or velocity.

Models using modulated carrier (RF) and magnetic (inductive or variable reluctance) pickups with several pulse output options are available. Configurations can be customized to satisfy requirements including gauss strengths (except RF models), hermetic sealing, mounting threads, interconnection type, pickup shape/length and environmental considerations (e.g. explosion proof, intrinsically safe).



## Standard Features and Specifications

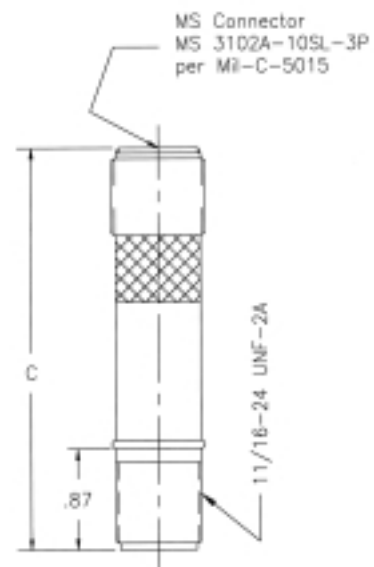
- |                               |   |                   |   |
|-------------------------------|---|-------------------|---|
| Type:                         | <ul style="list-style-type: none"> <li>• Variable reluctance or RF type</li> </ul>  | Physical Features | <ul style="list-style-type: none"> <li>• Operating temperature: 40° to 185°F (-40° to 85°C)</li> <li>• Storage temperature: 54° to 302°F ( 65 to 150°C)</li> <li>• Body material: 300 series stainless steel</li> <li>• MS style connector (mates with MS 3106-10SL-3P)</li> <li>• Encapsulated: epoxy potting (hermetically sealed, welded construction optional)</li> </ul> |
| Input Power                   | <ul style="list-style-type: none"> <li>• 8 to 30 Vdc, 10 mA max. @ no load</li> <li>• Reverse polarity protected</li> </ul>   | Approvals:        | <ul style="list-style-type: none"> <li>• CE complaint to EMC Directive 89/336/EEC for use in residential, commercial, light industrial and heavy industrial environments.</li> </ul>  |
| Pulse Output Options:         | Choices of: <ul style="list-style-type: none"> <li>• Open collector; maximum OFF voltage 30 Vdc maximum ON current 0.40 amps</li> <li>• TTL/CMOS; fanout of 5 TTL/CMOS loads</li> <li>• 0 to 10 vdc square wave (requires 15 to 30 Vdc input power)</li> </ul>  |                   |   |
| Interconnection Type Options: | <ul style="list-style-type: none"> <li>• (standard) 3 pin MIL-C-5015 type connector with gold plated pins; mates with MS3106-10SL-3S; other connectors available</li> <li>• pigtail with wires or cable</li> <li>• NPT threaded body with wire or cable pigtail for explosion proof environments</li> </ul> |                   |   |

## Ordering Information

	Model No.	C (inches)	Pulse Output
Magnetic	DM013	3.07	Open Collector
	DM001	3.07	0 - 5 VDC
	DM012	3.07	0 - 10 VDC
RF	DR007	3.45	Open Collector
	DR001	3.45	0 - 5 VDC
	DR003	3.45	0 - 10 VDC

In addition to the above-specified pickups, Flowmetrics can make these pickups in other lengths, configurations, mounting thread as well as with options like pigtail lead, NPT thread for explosion proof applications, etc.

## Dimensions:





# Intrinsically Safe Digi-Pulse Pickups

Our intrinsically safe models feature the same high quality construction and materials as our standard Digi-Pulse series. They are certified by CSA (with NRTL/C) and CENELEC for Class 1, Zone 0, IIC and Ex ia IIC T6 hazardous locations.

## Features and Specifications

- Type: • Variable reluctance or RF type
- Input Power: • 13 to 28 Vdc, 35 mA max. @ 24 Vdc (Class i, Zone 0, IIC models)  
• 7.5 to 28 Vdc, 10 mA @ ≤ 10 Vdc (Class I, Zone 0 IIA models)  
• Reverse polarity protected
- Pulse Output • TTL/CMOS; fanout of 5 TTL/CMOS loads  
• Open collector; maximum OFF voltage 30 Vdc  
Maximum ON current 0.40 amps
- Interconnection Type Options: • (standard) 3 pin MIL-C-5015 type connector with gold plated pins; mates with MS3 106-10SL-3S; other connectors available  
• Pigtail with wires or cable  
• NPT threaded body with wire or cable pigtail for explosion proof environments

### Physical Features

- Operating temperature: -40°F to 185°F (-40°C to 85°C)
- Storage temperature: -54°F to 302°F (-65°C to 150°C)
- Body material: 300 series stainless steel

- Encapsulated: epoxy potting (hermetically sealed, welded construction optional)

Entity parameters: Group IIA:  $V_{max}/U_i = 30$  Vdc,  $I_{max}/L_i = 190$  mA  
 $C_i/C_o = 0.0$  uF,  $L_i/L_o = .50$  mH

Group IIC:  $V_{max}/U_i = 30$  Vdc,  $I_{max}/L_i = 200$  mA  
 $C_i/C_o = 0.0$  uF,  $L_i/L_o = .50$  mH

### Approvals:

- Intrinsic Safety to CSA (with NRTL/C) and CENELEC
- CE compliant to EMC Directive 89/336/EEC for use residential, commercial, light industrial and heavy industrial environments

## Ordering Information

Table 1:  
Hazardous Location: Class I, Zone 0 IIC, Class 1, Grp. A,B, C, D & Class II, Div 1, Grp. Class III and Coal Dust\*

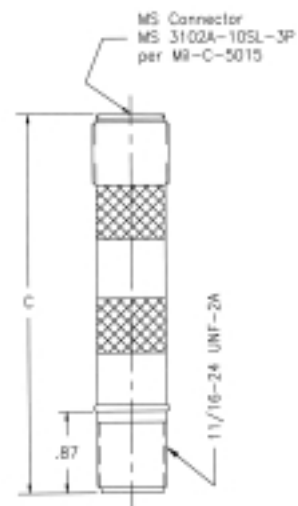
	Model No.	C (inches)	Pulse Output
Magnetic	DMX001-1	4.47	Open Collector
	DMX001-2	4.47	0 - 5 VDC
RF	DRX001-1	4.85	Open Collector
	DRX001-2	4.85	0 - 5 VDC



Table 2:  
Hazardous Location: Class I, Zone 0 IIA, Class 1, Div. 1 Grp. D & Class II Div 1, Grp G, Class III and Coal Dust\*

	Model No.	C (inches)	Pulse Output
Magnetic	DMX001-3	4.47	Open Collector
	DMX001-4	4.47	0 - 5 VDC
RF	DRX001-3	4.85	Open Collector
	DRX001-4	4.85	0 - 5 VDC

## Dimensions:



\* If equipped with NPT/pigtail lead combinations, above units are also suitable for Class II, Div. 1, Grp. E, F, G

In addition to the above-specified pickups, Flowmetrics can make these pickups in other lengths, configurations, mounting thread as well as with options like pigtail lead, NPT thread for explosion proof applications, etc.

# Pickups with RTD

## Magnetic and RF

These pickups have the same specification as the standard magnetic and RF except with built-in 100 Ohm platinum RTD with the Following Specifications:

- Resistance :  $100\Omega \pm 12\Omega$
- Temperature Coefficients :  $.00385 \Omega/\Omega/^\circ\text{C} \pm 13\text{ppm}/^\circ\text{C}$
- Temperature Range : -50 to 400 °F (Magnetic or RF)



### Ordering Information

	Model No.	Description	DC resistance (Ohm)	Gauss Strength
RF	RF-12	with 4-Pin Connector	10.5	N/A
	RF-13	with 5-Wire Pigtail	10.5	N/A
Magnetic	PC24-147E	with 4-Pin	2200	325
	PC24-149E	with 5-Wire Pigtail	2200	325

## WIRING DETAILS

