

# Magnetic Pickup Speed Transducers



- **Precise, reliable engine speed measurement**
- **Options for thread size, body length and connector type**

## Description

Accurate speed measurement is a requirement for many engine and generator applications. Murphy magnetic pickups provide an accurate and reliable means of converting rotational speed into a signal that can be measured by electronic control equipment.

Each pickup is positioned close to an engine flywheel or gear wheel. As the metal gear teeth rotate past the pickup pole-piece, an AC voltage signal is generated by the pickup coil; the output signal frequency is proportional to engine speed:-

$$f_{\text{output}} = \frac{\text{engine R.P.M.} \times \text{no. of flywheel teeth}}{60}$$

The signal may be measured by equipment such as Murphy tachometers, speed relays or engine controls, for speed indication, automatic starting, load switching and overspeed tripping.

The pickup must be installed to give an output voltage that is sufficient for the control equipment being used. Output voltage is dependent on a factors such as the type of pickup, its proximity to the gearwheel, the gearwheel speed, material and tooth profile, and the electrical load connected to the pickup. For accurate speed sensing, use a two-core shielded cable between the pickup and control unit, with the shield earthed at one end only.

Murphy pickups are available with a range of body sizes, thread sizes and connectors, as detailed overleaf.

## How to order

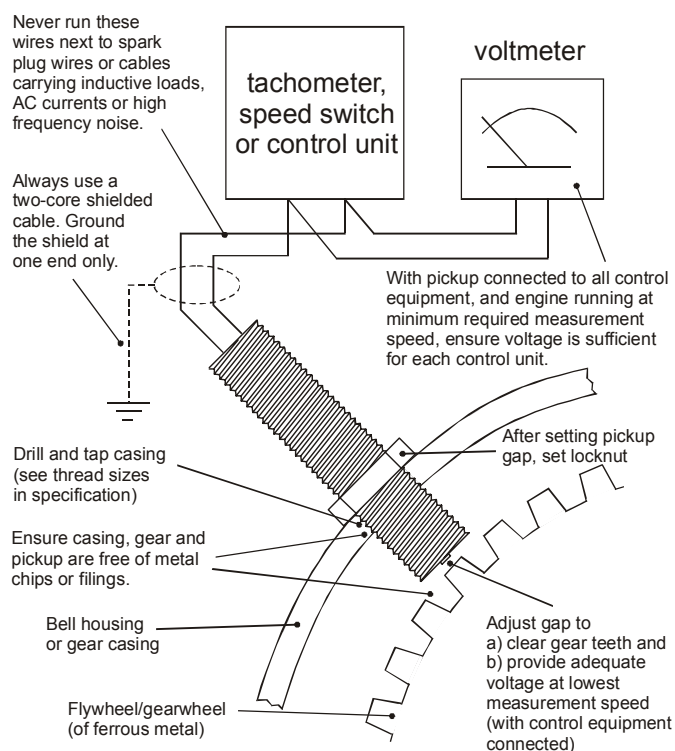
Please refer to the specification chart overleaf then quote the stock code required.

### Accessories:-

Stock Code	Description
60.WS.2162	Twin screened cable for pickup connection
81.01.2001	5/8" locking nut for MP-3298
68.MP.1NUT	spare 5/8" stainless steel locking nut

## Typical installation

For full installation instructions, see document MP-8802N.



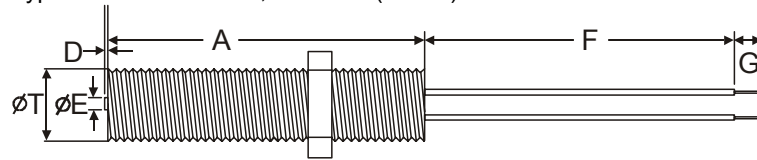
## Warranty

Materials and workmanship for this product are covered by a one or two year warranty as indicated overleaf. Full warranty details are available at [www.fwmurphy.co.uk/warranty](http://www.fwmurphy.co.uk/warranty).

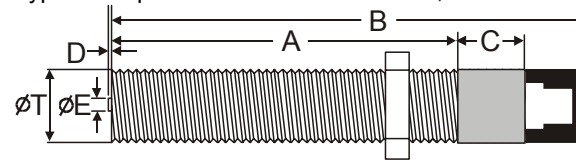
## Specifications

Body Types:-

Type 1: insulated leads, 20 AWG (note 6)



Type 2: ¼" push-on blade terminals x 2, knurled end section (C)



	stock code									
	MP3298	MP7906	MP7905	68MP0060	68MP1815	68MP0058	68MP0258	MP3	68MP0158	MP5
Body type	1 (diagram above)			2 (diagram above)						
Body material	Note 1	Note 2		stainless steel						
Locknut material	Note 1	Note 3		stainless steel						
Internal potting	epoxy resin			glass filled Nylon or polypropylene						
Dimensions:-										
T (thread)	5/8"-18 UNF	3/4" x 16 UNF		M16 x 1.5	M18 x 1.5	5/8" x 18 UNF				
A	3.00" (76 mm)		4.5" (114 mm)	1.89" (48 mm)		3.00" (76 mm)		5.00" (126.5 mm)		
B	n/a			2.76" (70 mm)		3.94" (100 mm)		5.91" (150 mm)		
C	n/a			10 mm						
D	0.030" (1.0 mm)	1.0 mm		0.4 mm nominal						
E	0.108" (3 mm)	0.108" (3 mm)		0.125" (3.17 mm)						
F	min. 12" (305 mm)			n/a						
G	0.25" (6 mm)	0.37" (9 mm)		n/a						
Coil resistance	975 Ohms typ.	2500 Ohms typ.		350 Ohms nominal						
Coil inductance	400 mH typ. @ 1kHz	800 mH max. @ 1kHz		150 mH nominal						
Nominal output	20 V p-p typ. (note 7)			20 V p-p typ. (notes 8, 9)						
Operating temp.	-54 to +107°C (-65 to +225°F)			-20 to +120°C (-4 to +248°F)						
Weight (approx.)	66g	91g	117g	57g	79g	57g	74g		109g	
Warranty	2 years			1 year						
Additional notes (see below)	6	6	6					4		5

### Notes:-

1. Type 300 stainless steel
2. Type 6061 aluminium/anodise class I
3. Steel, nickel plated
4. MP3 = 68MP0258 plus fibre washer and terminal dust boot
5. MP5 = 68MP0158 plus fibre washer and terminal dust boot
6. Insulated leads, 20 AWG, STR/TEF insulated per MIL-W-16878D type E, 1 white and 1 black: white lead is positive with respect to black lead on approach of ferrous metal
7. Output for 20 pitch gear @ 100 inches per second, 0.005" gap and 100 KOhm load
8. Output for 60 tooth, 6" diam, mild steel gear wheel @ 1000 rpm, with 0.01" gap and 10 KOhm load
9. 30mm/second minimum speed required to generate 100mV p-p under conditions of note 8



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USA - ISO9001:2000 FM 28221  
UK - ISO9001:2000 FM 29422

In order to consistently bring you the highest quality, full featured products, we reserve the right to change our specifications and designs at any time.