

# Magnetic Pickup Speed Transducers



## Features

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

Accurate speed measurement is a requirement for many engine-driven 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, with the output signal frequency proportional to engine speed:

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 shutdown protection.

The pickup must be installed to give an output voltage that is sufficient for the control equipment being used. The output voltage is dependent on 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 – see Specifications section.

## How to order

Please refer to the Specifications section, then quote the stock code required.

### Accessories:

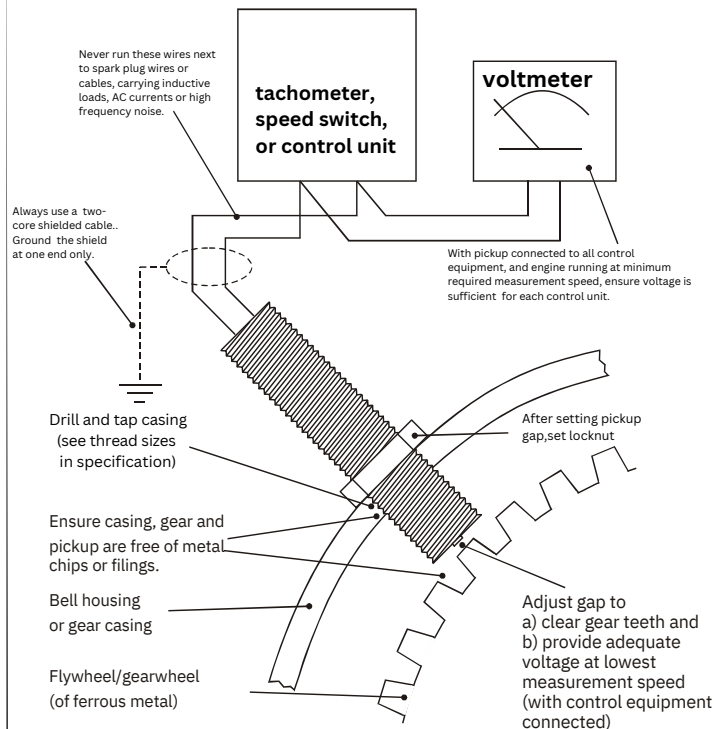
Stock code	Model / description
68.MP.1NUT	Spare 5/8" stainless steel locking nut

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

60

## Typical Installation

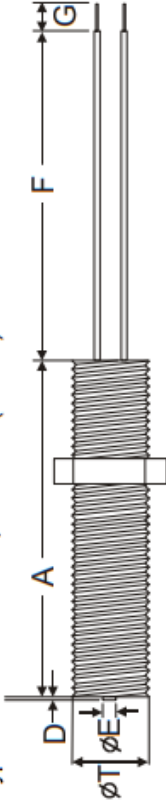
For full installation instructions, see document **MP-8802N (00-02-0181)**.



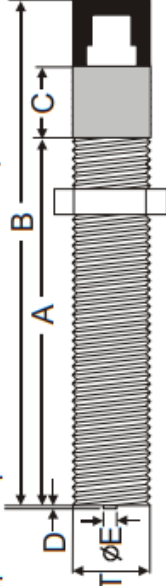
# Specifications

Body Types:

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



Type 2: 1/4" push-on blade terminals x 2, knurled end section (C)



	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	M16 x 1.5	M18 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)	1.89" (48 mm)	3.00" (76 mm)	3.00" (76 mm)	3.00" (76 mm)		5.00" (126.5 mm)	
B	n/a	n/a	2.76" (70 mm)	2.76" (70 mm)	3.94" (100 mm)	3.94" (100 mm)	3.94" (100 mm)		5.91" (150 mm)	
C	n/a	n/a	10 mm	10 mm	10 mm	10 mm	10 mm			
D	0.030" (1.0 mm)	1.0 mm	0.4 mm nominal	0.4 mm nominal	0.4 mm nominal	0.4 mm nominal	0.4 mm nominal			
E	0.108" (3 mm)	0.108" (3 mm)	0.125" (3.17 mm)	0.125" (3.17 mm)	0.125" (3.17 mm)	0.125" (3.17 mm)	0.125" (3.17 mm)			
F	min. 12" (305 mm)	min. 12" (305 mm)	n/a	n/a	n/a	n/a	n/a			
G	0.25" (6 mm)	0.37" (9 mm)	n/a	n/a	n/a	n/a	n/a			
Coil resistance	975 Ohms typ.	2500 Ohms typ.	350 Ohms nominal	350 Ohms nominal	350 Ohms nominal	350 Ohms nominal	350 Ohms nominal			
Coil inductance	400 mH typ. @ 1kHz	800 mH max. @ 1kHz	150 mH nominal	150 mH nominal	150 mH nominal	150 mH nominal	150 mH nominal			
Nominal output	200 V p-p typ. (note 7)	200 V p-p typ. (notes 8, 9)	20 V p-p typ. (notes 8, 9)	20 V p-p typ. (notes 8, 9)	20 V p-p typ. (notes 8, 9)	20 V p-p typ. (notes 8, 9)	20 V p-p typ. (notes 8, 9)			
Operating temp.	-54 to +107°C (-65 to +225°F)	-54 to +107°C (-65 to +225°F)	-20 to +120°C (-4 to +248°F)	-20 to +120°C (-4 to +248°F)	-20 to +120°C (-4 to +248°F)	-20 to +120°C (-4 to +248°F)	-20 to +120°C (-4 to +248°F)			
Weight (approx.)	66g	91g	79g	79g	57g	57g	74g		109g	
Warranty	2 years	2 years	1 year	1 year	1 year	1 year	1 year			
Additional notes (see below)	6	6	6	6	4	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

## SALES CONTACT

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CONTROLS®

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