Magnetic Pickups (MPUs)

for sensing prime mover speed

FUNCTION

To control the speed of a prime mover, speed controls compare actual speed to desired, or set, speed. The speed sensor most often used to detect prime mover speed is the magnetic pickup (MPU).

When a magnetic material (usually a gear tooth driven by the prime mover) passes through the magnetic field at the end of the magnetic pickup, a voltage is developed. The frequency of this voltage is translated by the speed control into a signal which accurately depicts the speed of the prime mover.

- Produces electrical frequency
- Easily installed on engine
- Requires no energizing circuit from control
- Used with all electronic controls
- Available for hazardous location installation

INSTALLATION

The MPU is usually mounted radially to the gear, either through the housing or on a rigid bracket. If the MPU must be mounted off the face of the gear, be sure to check for gear end play in addition to gear runout.

TYPES OF MPUs

Magnetic pickups are available in different lengths and mounting thread sizes. Those commonly used with Woodward controls are listed on the next page.

The standard MPU requires a mating connector which is not included with the basic pickup. Be sure to order the complete assembly which includes the connector assembly and the MPU. Unless a standard pickup is ordered as a replacement, the complete assembly should be ordered to ensure that the connector will be available.

SETTING THE GAP

The gap between the end of the MPU and the gear tooth is set at 0.25 to 1.02 mm (0.010 to 0.040 inch) at the closest point. The MPU will be damaged if it touches the moving gear. A properly installed MPU will provide as much as 50 Vac (rms); most Woodward controls require a minimum of 1.5 Vac at the lowest speed. Voltage decreases as the MPU is moved farther from the gear. If the gap between the pickup and the gear cannot be measured directly, it can be determined by counting the number of turns the pickup is backed away from the gear. One full turn counterclockwise will move the MPU out 0.0555 inch (1.5 mm for the metric model).

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Distributors & Service
Woodward has an international network of distributors and service facilities. For your nearest representative, call the Fort Collins plant or see the Worldwide Directory on our website.

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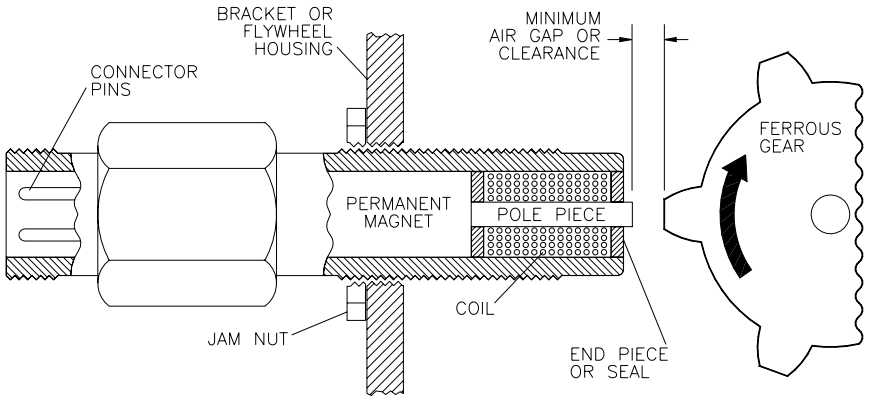

OUTPUT FREQUENCY OF MAGNETIC PICKUP IN HERTZ

$$Hz = \frac{\text{NO. OF GEAR TEETH} \times \text{GEAR RPM}}{60}$$

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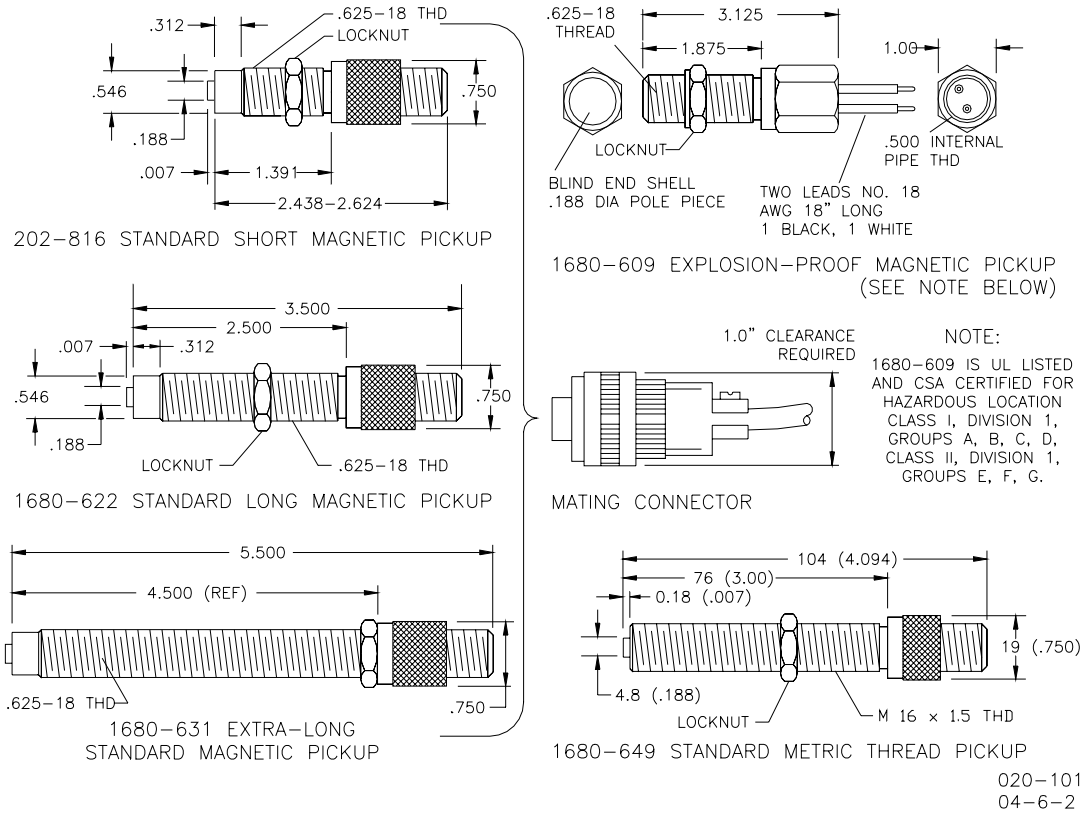
Magnetic Pickup



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Outline Drawing
(Do not use for construction)

More information in manual 82510.

For more information contact: