5 reasons to choose induction over hall effect sensors.

Hall-Effect sensors are a well-established non-contact sensor option for many tough and arduous applications. Using semiconductor Hall chips and a magnet mounted to a rotating shaft or push rod, the output in response to the proximity of the magnet changes and its position can, therefore, be measured.

Induction sensor technology, such as that employed in the Gill linear and rotary position family is also a non-contact solution, so what advantages do these offer over the Hall-Effect sensors?

1. Because the Inductive sensor is a true solid-state device, it has no moving parts, bearings or shaft that requires sealing which can subsequently wear or fail. This means the inductive device can be installed in the most difficult of environments where water, dirt, grease, grit, sand and vibration may be encountered which can cause premature failure of mechanical components.

2. Similarly, because the Hall sensor uses a magnet as its actuator, this makes it vulnerable to interference from magnetised metalwork and electronics, compromising its performance. This susceptibility to magnetic interference is not shared by the inductive sensor, again enhancing its suitability for challenging environments and reliable operation.

3. Where higher temperatures are encountered, the inductive sensor again offers benefits. Hall-effect sensors can exhibit large drift characteristics as the temperature varies. Inductive sensors do not exhibit this characteristic.

4. For very high temperature environments the signal processing electronics do not need to be located in close proximity to the sensing coils. Magnetic sensors require relatively delicate, silicon based electronics to be located at the sensing point.

5. The final primary benefit offered by inductive sensors is that of simpler installation. As previously described, Hall sensors require a magnet as an activator, and this magnet has to be incorporated into the installation. The inductive sensor only requires a ferrous target, so the activator can be an existing part of the measured assembly, or machined into the assembly at manufacture. Alternatively, it can be a separate component, profiled to provide a specific output or to more easily integrate to the assembly.