

TechNote #13 VIBROTIP®

Tips on correct use of the VIBROTIP® optical sensor

Measurement problems

It is important to note that when using VIBROTIP®'s optical sensor for RPM measurement, several considerations such as reflections from surrounding light sources and correct orientation of the sensor must be observed in order to obtain accurate results. Therefore, please bear in mind the points described below when taking measurements. In this way, you can obtain a correct signal.

Contrast mark

The optical sensor detects changes in contrast - for example, from light to dark or from dark to light. It is, therefore, important to use a correct contrast mark on the rotor. For example, use a light-coloured tape on a dark-coloured rotor. Never use reflective tape!

Interference from other light sources

The optical sensor must be pointed radially toward the shaft (Fig. 1) and located beneath the shaft wherever possible: this avoids any interference from light coming from above. Also, make sure that light from fluorescent lamps is not shining directly into the optical sensor or onto the contrast mark. In case of interference from external light sources, such as fluorescent lamps, or insufficient illumination, a flashlight may be used to illuminate the shaft and contrast mark in order to obtain a stable light signal.

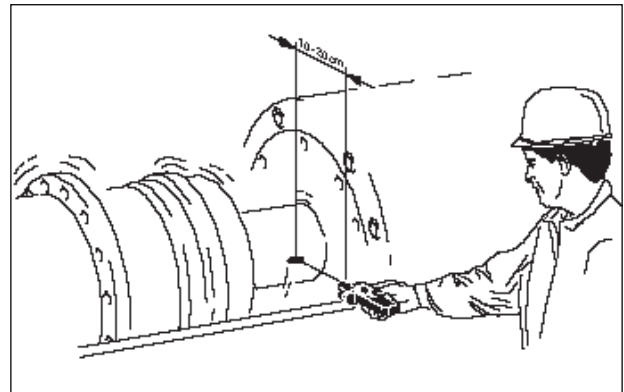


Fig. 1 Correct orientation of the optical sensor during RPM measurement

Measurement separation

To obtain the best possible results when measuring RPM, it is recommended that the distance between the optical sensor and the rotor is kept approximately equivalent to the rotor diameter.

Reflections

Reflections from shiny objects can lead to instable signals. This is due to constant change in the light detected by the optical sensor. Either remove or cover all shiny objects near the sensor to eliminate any danger of reflection.