

Electro-Sensors Product: M5000T Shaft Speed Switch with a 256 Pulser Disc or Split Collar Pulser Wrap

Application: Monitor the impeller shaft on ID and FD fans to guard against shaft slow-down or stoppage.

How it works: In a coal fired power plant, external fans are provided to give sufficient air for combustion. The forced draft (FD) fan takes air from the atmosphere and, first warming it in the air preheater for better combustion, injects it via the air nozzles on the furnace wall. Induced draft (ID) fans assist the FD fans by drawing out combustible gases from the furnace, maintaining a slightly negative pressure in the furnace to avoid backfiring through any opening. At the furnace outlet, and before the furnace gases are handled by the ID fan, fine dust carried by the outlet gases is removed to avoid atmospheric pollution.

The 256 disc installed on the end of the impeller shaft (wrap available when the end of the shaft is not accessible) generates a pulse train as the shaft rotates. The M5000T detects this pulse train and compares the input frequency to the pre-calibrated setpoint. A relay is tripped if the shaft speed falls below the acceptable threshold. The relay can be wired to an alarm or motor shutdown circuit. This proactive maintenance avoids the potential for plant shutdown, machinery damage, and dangerous operating conditions.

Benefits

- Early warning of a fault condition
- Compact and rugged system
- Accurate monitoring system
- Prevents damage, waste, and downtime



Split Collar Pulser Wrap



Pulser Disc



M5000T Speed Switch