

ABSTRACT

A filter for filtering particulates from a fluid stream includes a filter element with a filter medium and a metallic debris sensor assembly. The metallic debris sensor assembly includes a core and a coil of electrically-conductive wire. The core has a first end, a second end, and an intermediate portion interposed between the first and second ends. The first end is disposed in spaced relationship with the second end such that a measurement area is disposed therebetween. The coil of electrically-conductive wire is wound around the intermediate portion of the core. The core is adapted to generate a magnetic field in the measurement area when an electrical current is passed through the coil. At least a portion of the filter medium of the filter element is disposed within the measurement area. The filter can be incorporated into a wear detection system and used in methods of monitoring.

Fig 1