Oil-spill sensor | ATF1000

Features

- Completely replace the oil pollution detector of German Sita

- 24-hour operation,suitable for extreme environments

- Non-contact detection of oil pollution, the detection distance can reach 6mm

- Detection frequency: >100 KHz

- >3 limited warranty, low power operation (< 2W)

- With indicator light, can indicate the measurement area

- High sensitivity. The advanced software algorithm ensures the detection limit as low as 1um thick oil film and reduces the false alarm rate

- The built-in system can set the standard detection level of the industry, and can also set the alarm limit according to customer needs, and minimize the false rate.

Application

- Industrial automation
- Lithium battery welding

Description

ATF1000 Industrial On-line UV Fluorescent Oil Pollution Remote Sensing Detector is a non-contact optical detector that can detect oil and grease pollutants on the surface of strip steel, nickel, aluminum, plastic and other parts. It is suitable for cleanliness testing of metal parts. The equipment is highly sensitive and easy to maintain, and can detect oil pollution in time, which is convenient for users to respond in time.

ATF1000 can detect 1um thick oil layer on the surface of the object at a distance of 6mm from the surface of the object. The detector emits ultraviolet pulse beams to the surface of the object, excites the oil molecules in the target area to generate fluorescence, uses the inherent fluorescence properties of the oil molecules to identify its chemical composition, and sends an early warning signal to the operator.

System integration: the device can be connected to the PLC system through RS485, and can also communicate with the computer, and can also be connected with GSM modem/ WiFi modem to realize wireless data transmission.

Model	Describe
ATF1000	Industrial online type, RS485/Modbus output, level open drain output

1. Performance

| Project	Parameter
Detection principle	UV fluorescence spectroscopy
Best measurement distance	6 mm
Detection object	Automotive engine oil, turbine oil, vegetable oil, fuel oil, marine diesel oil, crude oil, civil fuel oil, gasoline, aviation kerosene, lubricating oil, hydraulic oil, mineral oil, etc.
Single detection area range	1mm diameter (at the best measurement position)
light source	Pulsed UV light source
Service life	>5 years
Output signal	RS485/mod bus, level open drain output
Power supply	Standard 12 VDC (10-30V)
Power	< 1.0 W (DC)
Size	134 X 32 X 15 mm (without cables)
Weight	350g

2. Product Introduction

In the process of metal processing and automobile production, due to the incomplete cleaning of metal parts during processing, it is easy to leave grease, oil, coolant, cleaning agent, fingerprints and other pollutants on the surface. The residue of these pollutants will cause a series of problems in the subsequent production process, such as easy peeling off of the coating, poor welding, insufficient bonding strength, surface defects, etc., and it is not easy to find the cause. By measuring the surface cleanliness of metal parts, the cleanliness of the surface of metal or glass products can be quantitatively tested, and objectively evaluated and analyzed to provide quantitative data for reducing post-process defects and improving cleaning processes.

3. Measuring principle

The ATF1000 oil pollution detector is irradiated by an LED lamp containing ultraviolet light waves, emitting ultraviolet wavelength light, and irradiating the contamination (oil pollution) on the metal surface. After the oil pollution absorbs the energy of ultraviolet light, it will emit new light, that is, fluorescence; The detector integrated in the instrument probe collects the fluorescent signal and converts it into a corresponding electrical signal.

After signal processing, it is transmitted through the RS485 interface. The stronger the fluorescence, the greater the degree of pollution, and vice versa, the cleaner.

The magnitude of the fluorescence intensity depends on the concentration of pollutants at the test point. The resulting output is expressed as a percentage, with 100 % representing an absolutely clean surface.
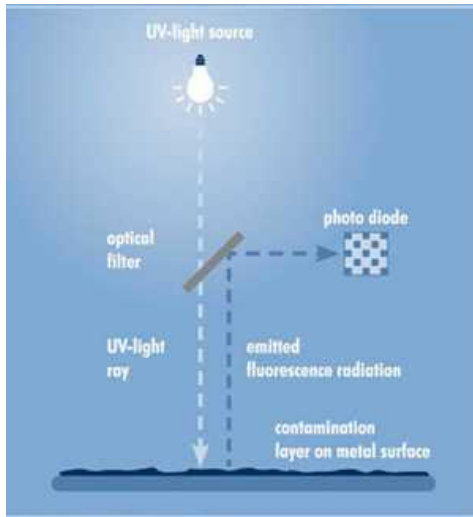
4. Types of Contaminants Detectable

Grease, oil, coolant, cleaning agent, fingerprints and other pollutants.

5. Scanning method

Line scan: Continuously test the cleanliness of flat strip samples using one or more scanning cleanliness sensors.

Surface scan:Use an X-Y positioning drive to inspect the cleanliness of the sample surface.

Product data information is current as of publication data. Products conform to specifications per the terms of Optosky Standard warranty.

3

Copyright © Optosky(Xiamen) Photonics Inc. 2015
1503 Bld. A04, 3rd Software Park, Jimei, Xiamen, 361005, China
Tel: +86-592-6102588

Free pattern scan:Measure the cleanliness of the sample surface using a 3D positioning system.