

HST-S-170 Portable Oil Contamination Analyzer



The HST-S-170 portable oil contamination detector boasts advantages such as fast counting speed, high accuracy, and easy operation.

It detects insoluble particles in organic liquids and polymer solutions, measuring the size and quantity of solid particles in the oil to comprehensively evaluate the degree of particulate impurities. Suitable for hydraulic oils and lubricating oils, it is widely used in aerospace, aviation, engineering machinery, power, petrochemical, port, metallurgy, and automotive manufacturing industries.

When a particle enters the sensing area in the oil, some light is blocked by the particle, reducing the amount of light received by the photodiode. This generates a pulse in the output voltage E , counting once. Since the amount of blocked light is proportional to the projected area of the particle, the amplitude of the output voltage pulse directly reflects the particle size. $E = (a/A) \times E_0$. If the particle is spherical, or described by an equivalent diameter d , and E_0 equals 10V, then $E = 7.854 \times d^2/A$. That is, the projected area of the particle and the pulse voltage amplitude have a linear relationship.

Feature:

- Employs the light-shielding method, resulting in high sensor precision and strong anti-interference capabilities;
- Automatic sample flow and volume control, with a wear-resistant, high-precision plunger pump ensuring constant sampling speed and precise sample volume control;
- Built-in "custom" standards allow for arbitrary particle size settings in 0.1 μ m intervals, facilitating comprehensive particle size analysis;
- Built-in automatic calibration function, capable of calibration according to ISO4402 - Spherical Particle Calibration Method, GB/T18854-2002 (ISO11171:1999) - Non-Spherical Particle Calibration Method, ROCT, and other standards, providing a convenient and quick calibration process;

- Simultaneously stores three calibration curves (ACFTD calibration curve, ISOMTD calibration curve, and GOST calibration curve), allowing for easy switching and reducing conversion errors;
- Wide pressure range detection system, from no pressure to a maximum optional 420 bar, suitable for various harsh industrial environments;

Parameter:

1. 10-inch high-definition touchscreen;
2. Sensor: High-precision semiconductor laser sensor;
3. Detection particle size range: 1 μ m~600 μ m (depending on the selected sensor);
4. Sensitivity: 1 μ m (ISO4402 - Calibrated for spherical particles) or 4 μ m(c) (GB/T18854/ISO11171 - Calibrated for non-spherical particles);
5. Detection channels: 32 detection channels;
6. Offline detection viscosity range: $\leq$ 150cSt (up to 420cSt with optional pressure bottle sampler);
7. Particle count repeatability: RSD<2%;
8. Particle count relative error: $\leq$ 8%;
9. Sampling volume relative error: $\leq$ 3%;
10. Sampling volume per test: 10ml/test;
11. Detection time: <1min/test;
12. Overlap error limit: 40000 particles/mL (depending on the selected sensor);
13. Cleaning/Detection Speed: 5~60mL/min (default 20mL/min);
14. Flushing Volume: Can be set between 0ml and 90ml (in 1ml increments);
15. Online Detection Pressure: 0.1~0.6MPa (with optional pressure reducing device, maximum pressure can reach 42MPa);