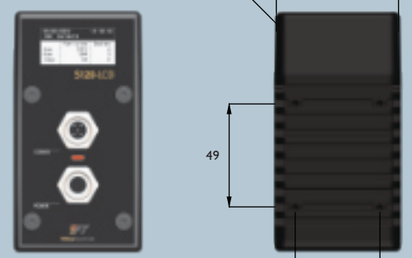
FEATURES

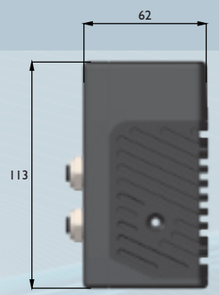
- Oil cleanliness codes: ISO 4406, NAS 1638, & SAE AS4059
- Particles are grouped by micron size in six categories - 4, 6, 14, 21, 38 & 70
- The S120 identifies air bubbles and eliminates them from the counts
- The shape recognition software is able to categorise particulate into sliding, cutting, fatigue wear & fibres
- A highly accurate sensor
- Compatible with SCADA/PC/PLC communication protocols

S120 LCD - DIGITAL IMAGING PARTICLE COUNTER

TECHNICAL INFORMATION

Accuracy	+/- 1 ISO code
Power Display	24 VDC
Ports	1/8" BSP
Max.Pressure	160 bar
Flow Rate	0.1 - 1.0 L/min
Viscosity Limit	2,400 cSt
IP Rating	IP65
Fluid Compatibility	Mineral oils, synthetic oils, diesel, Skydrol (on request), water glycols and other fluids possible - please contact us for more information.
Weight	0.6 Kg
Dimensions	113 x 60 x 62mm
Temperature Range	-20°C … 70°C
Output Options	Modbus RTU (RS485) Modbus TCP/IP Local panel mount indicator Local field mount indicator





Portable particle counter.

The S120 sensor is built in to both models of the Particle Pal Pro & Plus series.

Model variations:

1. Particulate
2. Particulate and water
3. Particulate, water and oil life option
4. Particulate + water + density + viscosity



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Filtertechnik





S120 LCD - DIGITAL IMAGING PARTICLE COUNTER

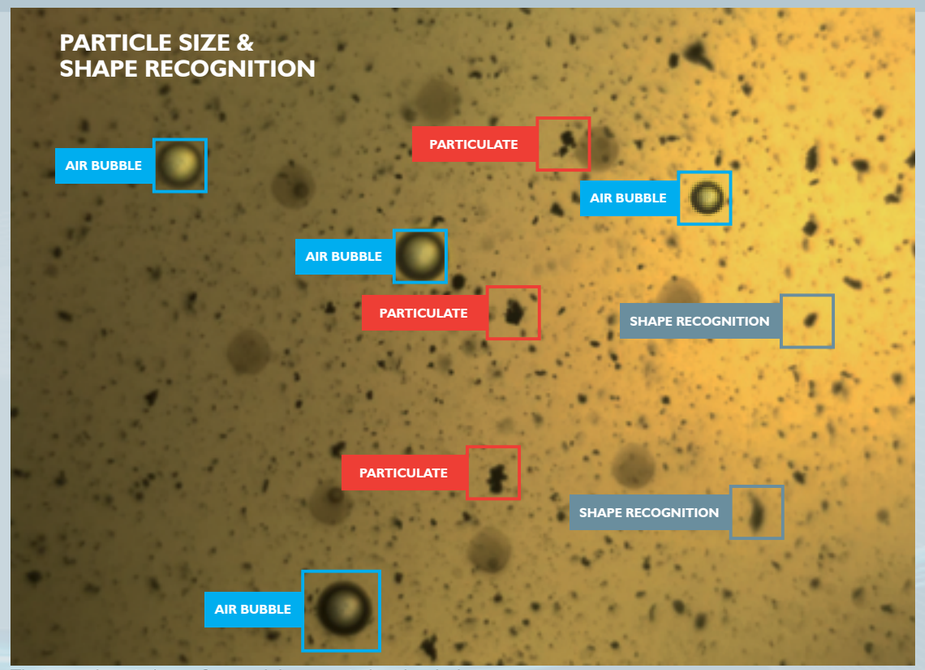
PROVIDING A DEEPER INSIGHT INTO OIL HEALTH



GET A **CLEAR** PICTURE OF YOUR **OIL**

The S120 LCD digital imaging particle counter is a revolutionary sensor capable of counting a broad spectrum of particles. Now with an integrated LCD display, the particle counter recognises shapes and eliminates air bubbles from the counts. Digital imaging particle counting provides engineers with a deeper insight into their oils. The sensor has the ability to measure a broad spectrum from 4 to > 70μ, recognising different shapes of particles, which can be grouped into fatigue wear, sliding wear and cutting wear as well as fibres. We refer to this as RCA (root cause analysis.)

The S120 LCD is designed for permanent online monitoring of oil cleanliness. Alternatively, Filtertechnik offer a range of portable oil analysis equipment with the S120 integrated.



The image above is 4mm x 3mm and shows particulate that the human eye cannot see.
Images available via TCP/IP connection.

SENSOR OPERATION

Filtertechnik's OilWear® S120 is an online sensor that detects particles and bubbles larger than 4 microns in the fluid and classifies them into 6 size ranges. Designed to work installed in-line, it provides real-time information about the machine's condition through the contamination of its fluids.

OilWear® S120 is the best ally for predictive maintenance strategy based on oil cleanliness. The measurement of an abnormal amount of particles allows the early detection of machine failures and thus the initiation of corrective actions.



RCA (Root Cause Analysis)

The S120 determines the shape of particles over 20μ. The embedded software, developed in conjunction with an oil analysis laboratory, categorises particles into 4 known shape groupings.

Root cause analysis (RCA) is the process of discovering the root causes of problems in order to identify appropriate solutions. A root cause analysis identifies the underlying or systemic, rather than the generalized or immediate, causes of a problem.

Examples of shape recognition from sensor via connection (not to scale):



KEY PRODUCT FEATURES:

- Reports in: ISO, NAS and SAE standards
- Air bubble counts are eliminated
- Max pressure 160 bar
- Size catagories: 4, 6, 14, 21, 38 & 70μ
- Particulate shape recognition:
  - Sliding wear
  - Fatigue wear
  - Cutting wear
  - Fibres

Causes of particle types:

Fibre

When fibres are found within an oil sample, these are typically the result of contaminants remaining from component manufacture, such as the braiding found in hoses, or entry of external foreign contaminants. While fibres may not be a serious cause of wear, they do contribute to a potential problem.

Cutting

Cutting wear is the result of hard contaminants penetrating the softer surface of components and removing material, also known as abrasive wear. These fragments can then oxidise to produce much harder oxide particles.

Sliding

Sliding wear is caused by relative motion between two smooth solid surfaces in contact under load. This will typically result in the removal of material in the form of debris and ploughing of one or both surfaces.

Fatigue

Fatigue wear involves a repeated number of cycles, where surface crack formation along grain boundaries can develop and the resulting debris gradually builds up within a system. While the initial surface crack may appear small, this can propagate deep within the subsurface and fracture.