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Hydraulic Filter Division Europe

Contamination Monitoring of Aviation Turbine Fuel



ENGINEERING YOUR SUCCESS.

ACM20

The Parker ACM20 portable particle counter, for use in measuring the levels of contamination in fuels. The ACM20, as per the UK's Energy Institute Test Method IP564, has now been included in the DEFSTAN 9191 Jet Fuel Specification as a report only test alongside the current gravimetric test method (IP423 or ASTM D5452) and clear & bright visual test method (IP216 or ASTM D2276).

Repeatable, Reproducible and in real time. The ACM20 offers the following user benefits:

- Primary output. Six cumulative particle size channels ranging from $>4\mu\text{m(c)}$ to $>30\mu\text{m(c)}$ and numbers per ml in accordance with ISO4406-1999.
- Secondary diagnostic output. reporting % volume distribution, indicating presence of free water due to Bi-modal curve.
- Recognised as a suitable/ possible replacement for subjective test methods such as clear & bright and gravimetric Millipore™.
- Quick and easy 2 minute test, with very little waste (typically 125ml per test).
- Totally portable, easy to use in the field or the laboratory.
- Connected to the process line via existing Millipore™ fittings already in use for other industry equipment.
- Used in other applications such as filter performance, pipeline commissioning and extending service intervals of supply systems.
- 300 downloadable test memory allowing for trend analysis and upkeep of statistical records to predict and save routine maintenance, resulting in less downtime.
- Data retrieval of test results from memory via hand set display.
- User friendly instrument improves familiarity and awareness of fuel systems.
- Traceable to ISO11171 for SRM2806 through ISO11943 principles.



Applications - Non Hazardous Areas

- Fuel testing laboratories – DefStan 9191
- Bottle sampling - energy Institute (EI) - IP564
- Replace clear & bright and gravimetric
- All petroleum based hydraulic application (Skydrol compatible available)



Application

1 In a recent study carried out at a major international airport, an ACM20 was used to monitor refueling activities. The results proved there were levels of solid contamination throughout the hydrant system that were previously undetected by current methods. As a result the hydrant was flushed and readings were reduced to acceptable levels.

2 In another airport in Europe, elements were removed from a filter water separator vessel, which were found to have ruptured due to a reverse flow in the system. Only the ACM20 detected the element failure and then proved that the newly installed elements were working correctly.

ACM20Z2

Adding to, and further enhancing the ACM product family, Parker's Condition Monitoring Centre has introduced an ATEX approved, ACM20Z2, Zone 2 accredited, particle counter for use in fuel farms, oil refineries and other hazardous area applications.



- Assembled in an approved and certified stainless steel enclosure to comply with ATEX Directive 94/9/EC and EN50 021 requirements.
- Can be used in explosive and hazardous areas, including Offshore and Mining.
- Certified to:
CE Ex 11 3 G Ex nR/nL 11C T6.
- 'A' Class product defined for the Aviation market.
- ATEX approved handset and keypad.
- **Primary Output.** Six cumulative particle size channels ranging from $>4\mu\text{m(c)}$ to $>30\mu\text{m(c)}$ and numbers per ml in accordance with ISO4406-1999.

- **Secondary Diagnostic Output.** Reporting % volume distribution, indicating presence of free water due to Bi-modal curve.
- Totally portable with rechargeable battery.
- Designed for on-line operation, connecting to the process line via existing Millipore™ fittings, already in use for other industry equipment.
- Traceable to ISO11171 for SRM2806 through ISO11943 principles.
- IP68 Rated.

Applications

- Airport Fuel Farm – Inbound receipt monitoring.
- Distribution terminals/hubs – outbound supply quality check.
- Oil and gas platforms – filtration performance.
- Oil refinery – specification limits.
- Pipeline and storage – commissioning.

ACM20Z2 is designed to be used to monitor various fuel sampling points in hazardous locations from refineries, pipelines, distribution terminals, airport fuel supply systems all the way to the point of filling at the aircraft wing. With Zone 2 classification the ACM20Z2 is the one and only particle counter accredited for this requirement.



IcountPD

IcountPD is a permanently installed fuel contamination detector. Designed for use in pipelines, refuellers and hydrant dispensers. The IPD provides cost effective, full flow monitoring and can interface with system data acquisition devices enabling continuous, remote monitoring and system shut down during a contamination event.



Applications

- Refineries – product quality
- Pipeline operations – Delivery liability
- Fuel distribution terminals – Into and out of storage monitoring
- Fuel farms – contaminant specification testing
- Dispensers / refuellers - uplifting to wing

- Calibration to approved, online methods supported by the relevant International Standard procedures.
- Reporting in accordance with ISO4406-1999. Codes 7-22.
- Non invasive installation of equipment.
- Designed for on-line operation, connecting to the process line via existing Millipore™ fittings, already in use for other industry equipment.
- Eliminates subjective qualitative, measurement associated with laboratory procedures.
- Cost effective market solution ensuring filter performance integrity.
- Early warning LED indicators for level detection with output relay switching (mounted on control panel for operator visual).
- Innovative design using laser diode light obscuration technology.
- Simple communications protocol for user set-up, operation and output information.
- Full PC/PLC integration technology.
- 4-20 mA / 0-5 Volts / RS232 / CANBUS outputs.
- Monitoring particle sizes > 4, >6, >14 and >30µm(c).
- IP66 Rated.

Application

Installed on the downstream side of the monitor/FWS vessel, the IPD receives slipstream sampling from an existing Millipore™ adaptor point. The real-time monitoring of the fuel passing through the sensor is reported per ISO4406:1999 outputs and fed back to the on-vehicle data acquisition unit. In the event of element failure, the alarm levels will be reached and the IPD will activate the “deadman” and stop fuelling.

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