

icountACM20 Lab Unit

Aviation Fuel Contamination Monitoring



DEFSTAN 91-91 Issue 6 Jet A-1 Fuel Specification, adopts particle counting.

The first fully functional particle counter approved for use on aviation fuel. After 5 years of development work carried out by Parker UK and partner, the ACM20 has passed all technical barriers and is now approved for aviation fuel quality per DEFSTAN 91-91 Issue 6.

Parker has consistently provided technically superior products to all fluid conditioning applications.



Product Features

- icountACM20 monitors aviation fuel contamination to DEFSTAN 91-91 Issue 6 Jet A-1 fuel specification.
- Energy Institute Test Method IP 564.
- 2-minute test procedure.
- Laser optical scanning analysis.
- Multi-standard ISO cleanliness reporting.
- Case-mounted pump enables monitoring possibilities. For example: Fuel storage/ vehicle tanks and fuel storage drums.
- Latest averaging software as standard.
- ParSmart Downloader software.

icountACM20/icountACM20Z

Features & Benefits

Test Time:
2 minutes

Repeat Test Time:
Every 2 minutes (Manual testing), every 6 minutes (automatic)

Principle of Operation:
Optical scanning analysis and measurement of actual particles and inference to water presence

Primary Output:
 $\geq 4\mu(c)$, $\geq 6\mu(c)$, $\geq 14\mu(c)$, $\geq 21\mu(c)$, $\geq 25\mu(c)$, $\geq 30\mu(c)$ counts per ml

Secondary Diagnostic Output:
% Volume Distribution, via graphical display on handset and printout (printout not available on icountACM20Z)

International codes:
ISO 7-22 in accordance with ISO 4406-1999

Data entry:
32 character two line dot matrix LCD. Full alpha numeric entry facility on keypad

Data retrieval:
Memory access gives test search facility for up to 300 saved tests

Calibration:
In accordance with Parker Calibration Procedure CM20-N, which complies to ISO11171:1999, Clause 6 (Omitting Annex F)

Re-calibration:
Every 12 months by a dedicated Parker Service Centre (Consult Parker) as required under strict EI methods

Max. working pressure:
6,000 PSI (420 bar)

Operating Temperature:
+41°F to +176°F (+5°C to +80°C)

Memory store:
300 test capacity

Computer compatibility:
Interface via RS 232 connection @ 9600 baud rate (USB serial cable to RS232 option available)

Laboratory sampling:
Utilizes on-board rear mounted pump

Portability:
Battery pack and carry case with wheels included

Power requirement:
ACM20: 12vDC input, 6 x 'D' Cell batteries or rechargeable battery pack
ACM20Z: Rechargeable battery pack, or 12vDC input

Printer facility:
Integral 16 column printer for hard copy data (not available on icountACM20Z)

Certification:
Complies with all relevant EC declarations of conformity

icount ACM20 Case Mounted Pump

- Integrated Pump assembly incorporated onto the ACM20 unit.
- Powered directly from ACM20 unit, LED power indication with no additional power supplies required.
- Direct sampling from fuel sample bottles or tank via 3 metre inlet suction tube.
- Incorporated double speed flush and test sequence.
- Managed flow rate/correct volume sample as per IP 564 test method.

icountACM20 is fully compliant with the EI (Energy Institute) test method

Applications

The Parker icountACM20 Portable Particle Counter has been developed from existing technology for monitoring contamination in Aviation Turbine and other hydrocarbon fuels, in accordance with the Energy Institute (EI) Method IP 564.

In addition, the ACM can also be used to monitor various fuels from existing sampling points in locations from refineries, pipelines, distribution terminals, airport fuel supply systems all the way through to the point of uplift into aircraft*.

* Hot works permit required for online sampling (ATEX Zone II unit available). Page 14.

- **Fuel Testing Laboratories – DEFSTAN 91-91 Issue 6**

In order to better understand dispersed contamination in jet fuel, particle counting is now included alongside existing laboratory techniques

- **Bottle Sampling - Energy Institute (EI) - IP 564**

Laboratory determination of the level of dispersed contamination in aviation fuel using an Automatic Particle Counter (APC)

- **Replace Clear & Bright and Gravimetric**

With the introduction of the icount ACM20, all subjectivity surrounding Clear & Bright and Gravimetric methods can be removed

- **Also for use on petroleum based hydraulic applications (Skydrol compatible available)**

Suitable for use with mineral oil and petroleum based fluid as per standard hydraulic particle counter, reporting fluid cleanliness to ISO 4406:1999

icountACM20 Lab Unit

Specifications

Construction:

ABS structural foam and injection moulded case
Hand-held display - ABS
Keypad fluorosilicone rubber

Mechanical Components:

Brass, plated steel, stainless steel and aluminium

Seals:

Fluorocarbon

Hoses:

Nylon (Kevlar braided microbore). St. steel armoured ends

Flow Rate:

25 - 28ml/min (dictated by CMP) 100ml/min with additional flush button

Fluid Compatibility:

Hydrocarbon Fuel, Mineral Oil. For other fluids consult Parker

Fuse:

1.25 amp fast blow fuse included for overload protection (spare supplied)

icountACM20 Technology:

Patented flow cell, light obscuration

Repeatability/Accuracy:

As per or better than ISO 11171

Coincidence:

40,000 particles per ml

Viscosity Range:

1 -100 centistokes

icountACM20 Weight:

17.6 lbs.

Monitor Carrying Case:

Astra Board case

Carrying Case Weight:

11 lbs.



Input Power Socket (note that you will have to remove the plastic dust cap to access the 12Vdc power socket).

A fast blow 1.25A fuse and the RS232 connection are located behind the removable cover plate. The RS232 interface is provided to download all test data stored in the instrument. See the ParSmart Downloader software for more information.

Ordering Information

Standard products table - icount ACM20

| Product Number | Supersedes | Description | icountACM20 | icountACM20Z |
|---------------------|------------|--|-------------|--------------|
| ACM202022UK | N/A | icountACM20 (UK) | X | |
| ACM202022US | N/A | icountACM20 (US) | X | |
| ACM202022EUR | N/A | icountACM20 (EURO) | X | |
| ACM202024UK | N/A | icountACM20 with lab kit - UK (DEFSTAN 9191) | X | |
| ACM202024US | N/A | icountACM20 with lab kit - US (DEFSTAN 9191) | X | |
| ACM202024EUR | N/A | icountACM20 with lab kit - EURO (DEFSTAN 9191) | X | |
| ACM202032UK | N/A | icountACM20 Z2 + online kit & UK battery charger | | X |
| ACM202032US | N/A | icountACM20 Z2 + online kit & US battery charger | | X |
| ACM202032EUR | N/A | icountACM20 Z2 + online kit & Euro battery charger | | X |
| ACM202034UK | | icountACM20 Z2 + online & lab kit + UK battery charger | | X |
| ACM202034US | | icountACM20 Z2 + online & lab kit + US battery charger | | X |
| ACM202034EUR | | icountACM20 Z2 + online & lab kit + Euro battery charger | | X |
| ACC6ND000 | B84794 | 1 meter process cable | X | |
| ACC6NE006 | B84816 | ParSMART downloader software | X | |
| ACC6NE019 | P843855 | icountACM20 transit Case | X | |
| ACC6NW003 | B84746 | Vapour/waste bottle assembly | X | X |
| ACC6NE029 | B84745 | Throttle kit | X | |
| ACC6NE001 | B84645 | Millipore adaptor kit | X | X |
| ACC6NE013 | B84609 | Re-chargeable battery pack | X | |
| ACC6NE008 | B84817 | UK power supply | X | X |
| ACC6NE010 | B84830 | US power supply | X | |
| ACC6NE009 | B84831 | Euro power supply | X | X |
| ACC6NE020 | B84832 | UK Offline kit | X | |
| ACC6NE021 | | Euro Offline kit | X | |
| ACC6NE022 | | US Offline kit | X | |
| SERMISC067 | N/A | 500ml verification fluid | X | |
| ACC6NE015 | B84702 | Printer reel (x5) | X | |
| ACC6NE014 | P843702 | Printer ribbon (x1) | X | |
| ACC6NE023 | B84647 | UK battery charger | | X |
| ACC6NE025 | B84652 | US battery charger | | X |
| ACC6NE024 | B84653 | Euro battery charger | | X |
| ACC6NE027 | B84650 | 2m process cable assembly | | X |
| ACC6NE028 | P843066 | Carry case | | X |

icountACM20Z

ATEX Approved Portable Particle Counter



For use in explosive and hazardous areas

icountACM20Z is designed to be used to monitor various fuels from existing sampling points in hazardous locations such as refineries, pipelines, distribution terminals, airport fuel supply systems all the way through to the point of uplift into aircraft.



Product Features:

- Assembled in an approved and certified stainless steel enclosure to comply with ATEX Directive 94/9/EC.
- Can be used in explosive and hazardous areas, including offshore and mining applications.
- ATEX Zone II
- Certified to CE Ex II 3 G Ex nR/nL IIC T6
- “A” Class product defined for the Aviation market.
- ATEX approved Handset and keypad.
- Suitable for use with mineral oil and petroleum based fluid as per ACM20/LCM20 particle counters.

icountACM20Z

Specifications

Construction:

Unit: Stainless Steel

Carrying case: ABS

Hand-held display: ABS

Keypad: polyester membrane

Mechanical components:

Brass, plated steel, stainless steel and aluminium

Seals: Fluorocarbon

Hoses: Nylon (Kevlar braided microbore)

Fluid compatibility:

All fuels. For other fluids consult Parker

Internal rechargeable battery:

Note: ONLY to be charged outside of the hazardous area, with the unit switched off

Fuse:

1.25A fast blow fuse included for overload protection

Return to Parker Hannifin if fuse is blown

icountACM202032 technology:

Unique optical scanning system



Applications in Fuels

● Oil Refinery

- To count and verify the levels of dispersed contamination in accordance with specification limits. (Consult Parker).

● Distribution Terminals/Hubs

- For use on receipt and outbound supply. Also to provide filtration performance, tank cleanliness and product quality checks.

● Storage

- Settling times can be reduced by monitoring with the ACM by ensuring that levels of dispersed contamination are below acceptable levels.

● Airport Fuel Farm

- Monitoring of fuels into storage, through the fuel farm, hydrant system and during uplift into wing.

● Pipeline Commissioning

- Fast real time monitoring of pipelines following pigging and cleaning processes.

● Oil and Gas Platforms

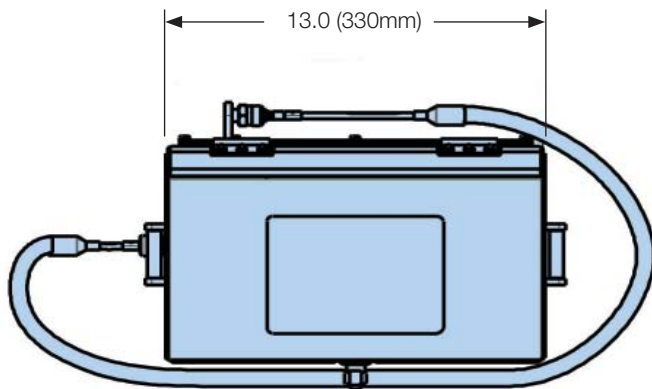
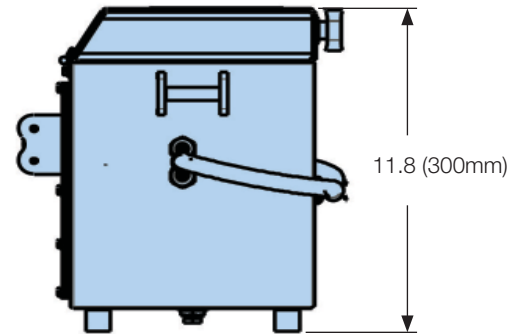
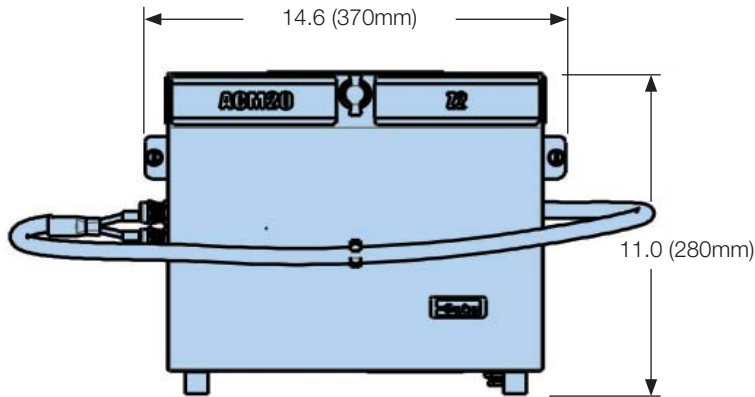
- Used to monitor the filtration performance, system cleanliness and quality of delivered product.



icountACM20Z

ATEX Approved Portable Particle Counter

Installation Details



dimensions in inch (mm)

Online Commission Kit

- a – icountACM20 Zone II Particle Counter
- b – Battery Charger
- c – Process Cable
- d – User Manual
- e – Downloader Software
- f – Throttle Kit
- g – Millipore Adaptor Assembly
- h – Aluminium Case
- i – Bottle Assembly

