

ACM20 Z2



ATEX Approved Portable Particle Counter

ACM20 Z2

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:

>4 μ (c), >6 μ (c), >14 μ (c), >21 μ (c), >25 μ (c), >30 μ (c) counts per ml.

Secondary Diagnostic Output:

% Volume Distribution, via graphical display on handset.

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.

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).

Max. working pressure:

420 bar.

Operating Temperature:

+5°C to +80°C

Memory store:

300 test (scrolling memory) capacity.

Computer compatibility:

Interface via RS 232 connection @ 9600 baud rate.

Portability:

15 kg. ACM20 has its own battery pack and carry case with wheels.

Power requirement:

Rechargeable battery powered or via the 12vDC input.

System connection:

Via Millipore adaptor with flow restriction through supplied needle valve.

Certification:

Complies with all relevant EC declarations of conformity

- 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 II 3 G Eex nA/nL IIB T * (*as tested)
- "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 LCM20 particle counter.



Specification

Construction:

Unit: stainless steel

Carrying case: ABS

Hand-held display: ABS

Keypad: polyester membrane

Mechanical components:

Brass, plated steel, stainless steel and aluminium

Seals: Viton

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

ACM20.2032 technology:

Unique optical scanning system

Repeatability/Accuracy:

Better than 5% (typical)

Using ACM20 Z2

ACM20Z2 is designed to be used to monitor various fuels from existing sampling points in hazardous locations from refineries, pipelines, distribution terminals, airport fuel supply systems all the way through to the point of uplift into aircraft. With Zone 2 classification, the ACM20Z2 is the worlds only ATEX approved particle counter.



Applications in Fuels

- **Oil Refinery**
 - To count and verify the levels of dispersed contamination in accordance with specification limits.
- **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 the fuels into storage, through the fuel farm, hydrant system and 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.



ACM20 Z2

Applications in hydraulics

Solutions in the offshore industry.

In addition, the ACM20 Z2 can be used in many hydraulic system applications as detailed below.

In many industries, worker awareness needs to be maintained at a high level to ensure the safety of their operation. This is particularly relevant to offshore oil-drilling and gas-drilling crews, given the interactive and hazardous nature of their work. The Zone 2 ACM20 portable particle analyser is a tried and tested technology designed, proven and approved as a fluid contamination monitor that crews are using and trusting in such hazardous and demanding environments.

- Certified to CE Ex II 3 G EexnA/nL IIB T* (*as tested).
- Can be used in explosive and hazardous areas, including Offshore and Mining.
- 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.



ACM20Z2 – operational in oil refineries and fuel fields.

Already operational in oil refineries and designed to be used inside commercial airfield fuel locations and at the point of upload of fuel into the aircraft, ACM20Z2 has an impressive success record in this approvals sensitive area of operation.

With a number of safety features designed in as operational standards, the ACM20Z2 can be taken to the point of use, connected in moments and reporting in little more than 2 minutes to ISO approved standards.

- Assembled in an approved and certified stainless steel enclosure to comply with ATEX Directive 94/9/EC and EN50 021 requirements.
- 'A' Class product defined for the aviation market.
- Designed for on-line operation, connecting to the process line via existing Millipore™ fittings, already in use for other industry equipment.

Applications in other hazardous environments.

- Railroad equipment manufacturer - Warranty protection.
- Power generation stations - Preventative maintenance.
- Mobile equipment - Roll-off cleanliness testing.
- Mining operations - Service tool.
- Steel mills - Preventative maintenance.

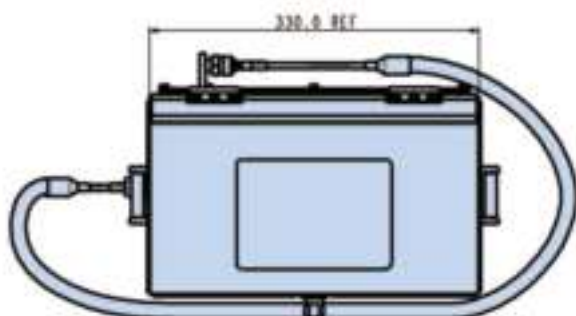
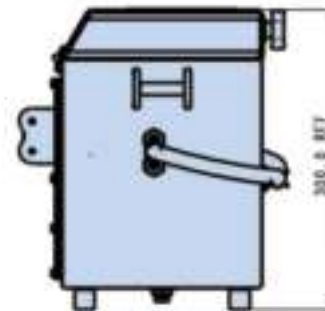
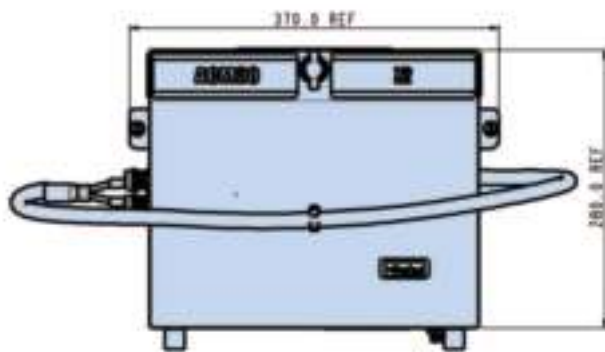


Online Commission Kit

- a – ACM20 Zone 2 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



Installation Details



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Alternative Fuel Monitoring



In addition to the Z2 Parker also have the ACM20 laboratory Particle Counter which has been designed in accordance with the Energy Institute (EI) Method IP PM DK.

The ACM20 with additional laboratory kit is proposed as an alternative method for use within DefStan 9191 – the standard for aviation turbine fuel, which the United Kingdom Civil Aviation Authority (CAA) has agreed is under the technical authority of the Director Defence Fuels Group.

The ACM can also be used to monitor various fuels from existing sampling points in the same way as the Z2*.

*Hot works permit required for online sampling.

Laboratory Kit

The Oil Delivery Unit (ODU) laboratory kit is a peristaltic pump unit that allows fuel to be pumped through the ACM20 for testing purposes offline.

Specification

Height: 150mm wide x 150mm deep x 170mm

Weight: 1.7 kg

Power Requirement:

Can be run from the 12-volt ACM20 power supply or from another suitable supply via the connecting lead supplied.

Fuse: 0.5 amp fast blow fuse included for overload protection.

Minimum Flow Rate: 15ml/min.



Average Particle Counts in AV System

The table below gives estimated counts found in a typical aviation fuel distribution system, and is given as guidance, in which APR/ EI filtration equipment is installed.

Receipt into Microfilter
Expect 2,500 counts per ml or cleaner @ 4µ(c)



Receipt into FWS (After MF)
Expect 500 counts per ml or cleaner @ 4µ(c)



Receipt into Storage (After FWS/MF)
Expect 100 counts per ml or cleaner @ 4µ(c)



FWS out of storage
Expect 500 counts per ml or cleaner @ 4µ(c)



After FWS into Hydrant
Expect 100 counts per ml or cleaner @ 4µ(c)



After Monitor Into Plane
Expect 100 counts per ml or cleaner @ 4µ(c)



Receipt into Microfilter		ISO Code - 4406 1999
	High Count	High Count Code
>4µ(c)	2,500	18
>6µ(c)	350	15
>14µ(c)	10	10

Receipt into FWS (After MF)		ISO Code - 4406 1999
	High Count	High Count Code
>4µ(c)	500	16
>6µ(c)	50	13
>14µ(c)	5	9

Receipt into Storage (After FWS/MF)		ISO Code - 4406 1999
	High Count	High Count Code
>4µ(c)	100	14
>6µ(c)	10	10
>14µ(c)	1	7

FWS Out of Storage		ISO Code - 4406 1999
	High Count	High Count Code
>4µ(c)	500	16
>6µ(c)	50	13
>14µ(c)	5	9

After FWS Into Hydrant		ISO Code - 4406 1999
	High Count	High Count Code
>4µ(c)	100	14
>6µ(c)	10	10
>14µ(c)	1	7

After Monitor Into Plane		ISO Code - 4406 1999
	High Count	High Count Code
>4µ(c)	100	14
>6µ(c)	10	10
>14µ(c)	1	7

Note: Figures will vary from location to location.

Ordering Information

Standard products table - ACM20 Z2

Product number	Description
ACM202032UK	Particle counter with online kit & UK power supply
ACM202032US	Particle counter with online kit & US power supply
ACM202032EUR	Particle counter with online kit & Euro power supply
B84647	UK battery charger
B84652	US battery charger
B84653	Euro battery charger
B84650	2m process cable assembly
B84816	Parsmart downloader software
P843066	Carry case
B84746	Bottle assembly
B84745	Throttle kit
B84645	Millipore adaptor assy

Standard products table - ACM20

Product number	Description
ACM202022UK	Particle counter UK
ACM202022US	Particle counter US
ACM202022EUR	Particle counter Euro
ACM202024UK	Particle counter with lab kit UK
ACM202024US	Particle counter with lab kit US
ACM202024EUR	Particle counter with lab kit Euro
B84794	1m process cable assembly
B84816	Parsmart downloader software
P843855	Carry case
B84746	Bottle assembly
B84745	Throttle kit
B84645	Millipore adaptor assy
B84609	Re-chargeable battery pack
B84817	UK power supply
B84830	US power supply
B84831	Euro power supply
B84832	Laboratory kit

Note 1: Part numbers featured with bold highlighted codes will ensure a 'standard' product selection.

Note 2: Alternate displayed part number selection will require you to contact Parker Filtration for availability.

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