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Ручные счетчики аэрозольных частиц серии MET ONE HHPC+



Ручные счетчики аэрозольных частиц серии MET ONE HHPC+ обеспечивают удобный мониторинг в труднодоступных местах в чистых помещениях классов ISO с 5 по 7. Легкие ручные счетчики с дисплеем высокого разрешения идеально подходят для рутинного мониторинга контролируемых сред и небольших помещений, простого устранения утечек из фильтров, приводящих к загрязнению аэрозольными частицами, выборочной проверки в критически важных зонах и поиска источников образования частиц в технологическом оборудовании.

- Промышленный стандарт ISO 14644-1
- Соответствие требованиям 21 CFR Part 11
- Обнаружение частиц размером от 0,3 до 10 мкм
- Обнаружение с использованием от 2 до 6 каналов
- Управление одной рукой
- Доступ к результатам подсчета частиц с ПК через сеть Ethernet, USB или кабель для передачи данных

Функции ручного счетчика аэрозольных частиц (HHPC) MET ONE

Стандарты

- Забор пробы согласно ISO 14644-1, класс 5 (федеральный стандарт FED STD, класс 100 или выше)
- Эффективность подсчета согласно ISO 21501-4
- Показатель нулевого подсчета согласно JIS B9921

Управление данными

- Создание профиля процесса на месте для быстрого отслеживания событий, связанных с загрязнением частицами
- Простое сетевое подключение в соответствии с требованиями раздела 21 CFR часть 11

- Хранение до 10 000 записей
- Удобная подставка для подзарядки с возможностью доступа к данным подсчета частиц через Ethernet или USB-кабель
- Загрузка данных через сеть Ethernet
- Соединение с использованием USB-накопителя или карты памяти

Эргономичный дизайн

- Легко читаемый дисплей с высоким разрешением
- Полностью настраиваемый дисплей
- Тонкая и легкая (0,7 кг) конструкция для использования одной рукой

Применение

- Рутинный мониторинг в чистых помещениях высокотехнологичных производств и чистых помещениях, регулируемых в соответствии с правилами надлежащей производственной практики (GMP)
- Поиск и устранение неисправностей, приводящих к загрязнению частицами, в критически важных производственных зонах
- Выборочная проверка и устранение неисправностей в мини-окружениях и на рабочих станциях

Технические характеристики

Performance	ISO 14644-1 class 5 compliant 0.3 µm samples in a minute
Industry Standards	21 CFR Part 11, ISO 14644-1:2015, CE, FCC
Coincidence Loss	10% at 4,000,000 particles/ft³
Sample Volume	10 µm
Throughput	2.83 L per minute
Zero Count	Conforms to JIS B9921 (1 count or less in 5 min; 95% UCL)
Counting Efficiency	50% at 0.3 µm (100% for particles > 0.45 µm)
Count Alarms Display and Cycles	User-defined alarm counts, Raw counts: N/CF, N/CM, N/L in cumulative or differential mode
Item Specifications Referenced	2089310-06

MET ONE HHPC 6+ Handheld with Charge Cradle

Platform	APC Instruments
Package Quantity	1
Environmental Conditions	Indoor Environment
Humidity Restrictions	< 95% (non-condensing)
Weight	0.7 kg(1.5 lb)
Width	27 cm(10.6 in)
Depth	10 cm(3.9 in)
Color	Gray
Power Requirements	100-240 VAC, 50/60 Hz, 1.0 A
Temperature Range	Operating temperature range: 10°C to 40°C, Storage temperature range: -10°C to 50°C
Sterile	Non-Sterile
Autoclavable	No
Nonpyrogenic	Yes
Sample Volume	10 µm

MET ONE HHPC 6+ Handheld with Case and Charge Cradle

Platform	APC Instruments
Performance	ISO 14644-1 class 5 compliant 0.3 µm samples in a minute
Industry Standards	21 CFR Part 11, CE, FCC, ISO 14644-1:2015
Particle Size Analysis Range	0.3 - 10 µm
Coincidence Loss	10% at 4,000,000 particles/ft³

Sample Volume	10 µm
Throughput	2.83 L per minute
Interfaces & Protocols	USB Client (v1.1), USB Host (v1.1)
Data Storage	10,000 records
Battery	Lithium Ion (rechargeable) battery
Battery Operating Time	10+ hours (typical use) / minimum 5.5 hours (continuous sampling)
Battery Recharge Time	3.5 hours
Pump Accuracy	±5% Flow Rate
Pump Repeatability	±5% Flow Rate
Zero Count	Conforms to JIS B9921 (1 count or less in 5 min; 95% UCL)
Counting Efficiency	50% at 0.3 µm (100% for particles > 0.45 µm)
Count Alarms, Display & Cycles	Raw counts: N/CF, N/CM, N/L in cumulative or differential mode, User-defined alarm counts
Label Locations	Alphanumeric Location Names
Environmental Conditions	Indoor Environment
Temperature Range	Operating temperature range: 10°C to 40°C, Storage temperature range: -10°C to 50°C
Humidity Restrictions	< 95% (non-condensing)
Power Requirements	100-240 VAC, 50/60 Hz, 1.0 A
Operating System	Windows IE, Safari and Firefox
Software	Supports data browsing via Ethernet on Windows Internet Explorer, Safari, and Firefox
Resolution	320 x 240

Display	3.5" high-resolution (320 x 240) color display
Operating Modes	Semi-automated, manual, controlled by operator
Autoclavable	No
Nonpyrogenic	Yes
Weight	0.7 kg(1.5 lb)
Width	27 cm(10.6 in)
Depth	10 cm(3.9 in)
Height	5.3 cm(2.1 in)
Color	Gray
Package Quantity	1

MET ONE HHPC 3+ Handheld with Case

Platform	APC Instruments
Industry Standards	21 CFR Part 11, ISO 14644-1:2015, CE, FCC
Particle Size Analysis Range	0.5 - 5 µm
Coincidence Loss	10% at 4,000,000 particles/ft³
Sample Volume	5 µm
Throughput	2.83 L per minute
Interfaces & Protocols	USB Client (v1.1), USB Host (v1.1)
Data Storage	10,000 records
Battery	Lithium Ion (rechargeable) battery
Battery Operating Time	10+ hours (typical use) & minimum 5.5 hours continuous sampling

Battery Recharge Time	3.5 hours
Zero Count	Conforms to JIS B9921 (1 count or less in 5 min; 95% UCL)
Counting Efficiency	50% at 0.5 μm (100% for particles > 0.75 μm)
Count Alarms, Display & Cycles	Raw counts: N/CF, N/CM, N/L (cumulative/differential mode); user-defined alarm counts
Label Locations	Alphanumeric Location Names
Environmental Conditions	Indoor Environment
Temperature Range	Operating temperature range: 10°C to 40°C, Storage temperature range: -10°C to 50°C
Power Requirements	100-240 VAC, 50/60 Hz, 1.0 A
Resolution	320 x 240
Display	3.5" high-resolution (320 x 240) color display
Operating Modes	Semi-automated, manual, controlled by operator
Autoclavable	No
Nonpyrogenic	Yes
Weight	0.7 kg(1.5 lb)
Width	27 cm(10.6 in)
Depth	10 cm(3.9 in)
Height	5.3 cm(2.1 in)
Color	Gray
Package Quantity	1

MET ONE HHPC 3+ Handheld

Platform	APC Instruments
Industry Standards	21 CFR Part 11, ISO 14644-1:2015, CE, FCC
Particle Size Analysis Range	0.5 - 5 µm
Coincidence Loss	10% at 4,000,000 particles/ft³
Sample Volume	5 µm
Throughput	2.83 L per minute
Interfaces & Protocols	USB Client (v1.1), USB Host (v1.1)
Data Storage	10,000 records
Battery	Lithium Ion (rechargeable) battery
Battery Operating Time	10+ hours (typical use) / minimum 5.5 hours (continuous sampling)
Battery Recharge Time	3.5 hours
Pump Accuracy	±5% Flow Rate
Pump Repeatability	±5% Flow Rate
Zero Count	Conforms to JIS B9921 (1 count or less in 5 min; 95% UCL)
Counting Efficiency	50% at 0.5 µm (100% for particles > 0.75 µm)
Count Alarms, Display & Cycles	User-defined alarm counts, Raw counts: N/CF, N/CM, N/L in cumulative or differential mode
Label Locations	Alphanumeric Location Names
Environmental Conditions	Indoor Environment
Temperature Range	Operating temperature range: 10°C to 40°C, Storage temperature range: -10°C to 50°C

Humidity Restrictions	< 95% (non-condensing)
Power Requirements	100-240 VAC, 50/60 Hz, 1.0 A
Resolution	320 x 240
Display	3.5" high-resolution (320 x 240) color display
Operating Modes	Semi-automated, manual, controlled by operator
Autoclavable	No
Nonpyrogenic	Yes
Weight	0.7 kg(1.5 lb)
Width	27 cm(10.6 in)
Depth	10 cm(3.9 in)
Height	5.3 cm(2.1 in)
Color	Gray
Package Quantity	1

MET ONE HHPC 6+ Handheld

Platform	APC Instruments
Performance	ISO 14644-1 class 5 compliant 0.3 µm samples in a minute
Industry Standards	21 CFR Part 11, ISO 14644-1:2015, CE, FCC
Particle Size Analysis Range	0.3 - 10 µm
Coincidence Loss	10% at 4,000,000 particles/ft³
Sample Volume	10 µm
Throughput	2.83 L per minute

Interfaces & Protocols	USB Client (v1.1), USB Host (v1.1)
Data Storage	10,000 records
Battery	Lithium Ion (rechargeable) battery
Battery Operating Time	10+ hours (typical use) / minimum 5.5 hours (continuous sampling)
Battery Recharge Time	3.5 hours
Zero Count	Conforms to JIS B9921 (1 count or less in 5 min; 95% UCL)
Counting Efficiency	50% at 0.3 µm (100% for particles > 0.45 µm)
Count Alarms, Display & Cycles	Raw counts: N/CF, N/CM, N/L (cumulative/differential mode); user-defined alarm counts
Label Locations	Alphanumeric Location Names
Environmental Conditions	Indoor Environment
Temperature Range	Operating temperature range: 10°C to 40°C, Storage temperature range: -10°C to 50°C
Humidity Restrictions	< 95% (non-condensing)
Power Requirements	100-240 VAC, 50/60 Hz, 1.0 A
Resolution	320 x 240
Display	3.5" high-resolution (320 x 240) color display
Operating Modes	Semi-automated, manual, controlled by operator
Autoclavable	No
Nonpyrogenic	Yes
Weight	0.7 kg(1.5 lb)
Width	27 cm(10.6 in)

Depth	10 cm(3.9 in)
Height	5.3 cm(2.1 in)
Color	Gray
Package Quantity	1

MET ONE HHPC 2+ Handheld

Platform	APC Instruments
Industry Standards	21 CFR Part 11, ISO 14644-1:2015, CE, FCC
Particle Size Analysis Range	0.5 - 5 µm
Coincidence Loss	10% at 4,000,000 particles/ft³
Sample Volume	5 µm
Throughput	2.83 L per minute
Interfaces & Protocols	USB Host (v1.1), USB Client (v1.1)
Data Storage	10,000 records
Battery	Lithium Ion (rechargeable) battery
Battery Operating Time	10+ hours (typical use) / minimum 5.5 hours (continuous sampling)
Battery Recharge Time	3.5 hours
Pump Accuracy	±5% Flow Rate
Pump Repeatability	±5% Flow Rate
Zero Count	Conforms to JIS B9921 (1 count or less in 5 min; 95% UCL)
Counting Efficiency	50% at 0.5 µm (100% for particles > 0.75 µm)
Count Alarms, Display & Cycles	Raw counts: N/CF, N/CM, N/L in cumulative or differential

	mode, User-defined alarm counts
Label Locations	Alphanumeric Location Names
Environmental Conditions	Indoor Environment
Temperature Range	Operating temperature range: 10°C to 40°C, Storage temperature range: -10°C to 50°C
Humidity Restrictions	< 95% (non-condensing)
Power Requirements	100-240 VAC, 50/60 Hz, 1.0 A
Operating System	Windows IE, Safari and Firefox
Resolution	320 x 240
Display	3.5" high-resolution (320 x 240) color display
Operating Modes	Semi-automated, manual, controlled by operator
Autoclavable	No
Nonpyrogenic	Yes
Weight	0.7 kg(1.5 lb)
Width	27 cm(10.6 in)
Depth	10 cm(3.9 in)
Height	5.3 cm(2.1 in)
Color	Gray
Package Quantity	1

MET ONE HHPC 3+ Handheld with Case

APC Instruments

Performance	ISO 14644-1 class 5 compliant 0.3 µm samples in a minute
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Industry Standards	21 CFR Part 11, ISO 14644-1:2015, CE, FCC
Particle Size Analysis Range	0.3 - 10 µm
Coincidence Loss	10% at 4,000,000 particles/ft³
Sample Volume	10 µm
Throughput	2.83 L per minute
Interfaces & Protocols	USB Client (v1.1), USB Host (v1.1)
Data Storage	10,000 records
Battery	Lithium Ion (rechargeable) battery
Battery Operating Time	10+ hours (typical use) / minimum 5.5 hours (continuous sampling)
Battery Recharge Time	3.5 hours
Pump Accuracy	±5% Flow Rate
Pump Repeatability	±5% Flow Rate
Zero Count	Conforms to JIS B9921 (1 count or less in 5 min; 95% UCL)
Counting Efficiency	50% at 0.3 µm (100% for particles > 0.45 µm)
Count Alarms, Display & Cycles	Raw counts: N/CF, N/CM, N/L in cumulative or differential mode, User-defined alarm counts
Label Locations	Alphanumeric Location Names
Environmental Conditions	Indoor Environment
Temperature Range	Operating temperature range: 10°C to 40°C, Storage temperature range: -10°C to 50°C
Humidity Restrictions	< 95% (non-condensing)
Power Requirements	100-240 VAC, 50/60 Hz, 1.0 A

Operating System	Windows IE, Safari and Firefox
Resolution	320 x 240
Display	3.5" high-resolution (320 x 240) color display
Operating Modes	Semi-automated, manual, controlled by operator
Autoclavable	No
Nonpyrogenic	Yes
Weight	0.7 kg(1.5 lb)
Width	27 cm(10.6 in)
Depth	10 cm(3.9 in)
Height	5.3 cm(2.1 in)
Color	Gray
Package Quantity	1

MET ONE HHPC 6+ Handheld with Case

Platform	APC Instruments
Performance	ISO 14644-1 class 5 compliant 0.3 µm samples in a minute
Industry Standards	21 CFR Part 11, ISO 14644-1:2015, FCC, CE
Particle Size Analysis Range	0.3 - 10 µm
Coincidence Loss	10% at 4,000,000 particles/ft³
Sample Volume	10 µm
Throughput	2.83 L per minute
Interfaces & Protocols	USB Client (v1.1), USB Host (v1.1)

Data Storage	10,000 records
Battery	Lithium Ion (rechargeable) battery
Battery Operating Time	10+ hours (typical use) / minimum 5.5 hours (continuous sampling)
Battery Recharge Time	3.5 hours
Pump Accuracy	±5% Flow Rate
Pump Repeatability	±5% Flow Rate
Zero Count	Conforms to JIS B9921 (1 count or less in 5 min; 95% UCL)
Counting Efficiency	50% at 0.3 µm (100% for particles > 0.45 µm)
Count Alarms, Display & Cycles	Raw counts: N/CF, N/CM, N/L in cumulative or differential mode, User-defined alarm counts
Label Locations	Alphanumeric Location Names
Environmental Conditions	Indoor Environment
Temperature Range	Operating temperature range: 10°C to 40°C, Storage temperature range: -10°C to 50°C
Humidity Restrictions	< 95% (non-condensing)
Power Requirements	100-240 VAC, 50/60 Hz, 1.0 A
Resolution	320 x 240
Display	3.5" high-resolution (320 x 240) color display
Operating Modes	Semi-automated, manual, controlled by operator
Autoclavable	No
Nonpyrogenic	Yes
Weight	0.7 kg(1.5 lb)

	Width	27 cm(10.6 in)
	Depth	10 cm(3.9 in)
	Height	5.3 cm(2.1 in)
	Color	Gray
	Package Quantity	1

MET ONE HHPC+ 6-Channel (3-Channel//10.0 μM)

	Platform	APC Instruments
	Weight	0.7 kg(1.5 lb)

MET ONE HHPC 3+ Handheld

	Platform	APC Instruments
	Performance	ISO 14644-1 class 5 compliant 0.3 μm samples in a minute
	Industry Standards	21 CFR Part 11, ISO 14644-1:2015, CE, FCC
	Particle Size Analysis Range	0.3 - 10 μm
	Coincidence Loss	10% at 4,000,000 particles/ft³
	Sample Volume	10 μm
	Throughput	2.83 L per minute
	Interfaces & Protocols	USB Client (v1.1), USB Host (v1.1)
	Data Storage	10,000 records
	Battery	Lithium Ion (rechargeable) battery
	Battery Operating Time	10+ hours (typical use) / minimum 5.5 hours (continuous sampling)

Battery Recharge Time	3.5 hours
Pump Accuracy	±5% Flow Rate
Pump Repeatability	±5% Flow Rate
Zero Count	Conforms to JIS B9921 (1 count or less in 5 min; 95% UCL)
Counting Efficiency	50% at 0.3 μm (100% for particles > 0.45 μm)
Count Alarms, Display & Cycles	User-defined alarm counts, Raw counts: N/CF, N/CM, N/L in cumulative or differential mode
Label Locations	Alphanumeric Location Names
Environmental Conditions	Indoor Environment
Temperature Range	Operating temperature range: 10°C to 40°C, Storage temperature range: -10°C to 50°C
Humidity Restrictions	< 95% (non-condensing)
Power Requirements	100-240 VAC, 50/60 Hz, 1.0 A
Resolution	320 x 240
Display	3.5" high-resolution (320 x 240) color display
Operating Modes	Semi-automated, manual, controlled by operator
Autoclavable	No
Nonpyrogenic	Yes
Weight	0.7 kg(1.5 lb)
Width	27 cm(10.6 in)
Depth	10 cm(3.9 in)
Height	5.3 cm(2.1 in)

Color

Gray

Package Quantity

1

Zero Count Purge Filter, 0.1 CFM for HHPC+

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