SKC Universal MTX Range

Intrinsically safe air sampling pumps, 5 to 4000 mL/min



The Universal MTX pumps are air sampling pumps for 1000 to 4000 mL/min at constant flow, and for 5 to 500 mL/min with a low flow adapter, certified intrinsically safe under ATEX and UKEX. There are three models, from the standard 224-44MTX with simple on/off control to the deluxe 224-PCMTX8 with full timer control and timer display.

1000–4000	5–500	30 inH_2O	8 h	±5 %
Constant flow, mL/min	Low flow with adapter, mL/min	Back pressure at 1 L/min	Minimum run time at 3000 mL/min	Flow control

Performance

Flow range	1000–4000 mL/min, constant flow operation 5–500 mL/min with adapter, constant pressure operation
Flow control	±5 % of set point, constant flow
Flow indicator	Built-in rotameter, scale 0.5–5.5 L/min Shows flow changes from filter loading or constricted tubing; not for calibrating the sample flow
Typical run time	8 hours minimum at 3000 mL/min against 20 inH_2O back pressure
Typical media back pressure	IOM sampler with GFA filter at 4 L/min: approximately 10 inH_2O IOM sampler with 0.8 µm MCE filter at 2 L/min: approximately 15 inH_2O
Flow fault (224-PCMTX4, 224-PCMTX8)	Obstructed tubing or excessive filter loading: shutdown after 15 seconds Four automatic restarts before the pump shuts down completely
Low flow sampling	Built-in constant pressure controller; low flow adapter for one to four tubes Set the pump to approximately 1.5 L/min, then open the low flow mode control three turns anticlockwise

Operating conditions

Temperature	Storage and operating: –20 °C to +40 °C
Humidity	Operating: 0–95 % RH

Mechanical

Dimensions	133 × 131 × 57 mm (H × W × D)
Weight	915 g
Casing IP rating	IP20; not water- or splashproof, do not use where water can enter the case
Anti-tamper cover	The pump controls sit beneath a clear anti-tamper cover that needs a tool for removal
Particulate trap	Built-in replaceable filter; replace it every 2–3 months or when it looks dirty

Electrical and communication

Battery pack	NiMH rechargeable, 2.0 Ah, 4.8 V
Charging	Single charger 223-203A or five station charger 223-113A, 100–240 V, 50/60 Hz Timed 16-hour constant current charge, then trickle charge
Mains power	Battery eliminator 223-305B (EU 2-pin plug) or 223-305C (UK 3-pin plug), 230 V, 50 Hz ATEX and UKEX certification invalid while fitted; not for hazardous areas
Low battery shutdown	Automatic on all models; prevents over-discharge of the battery pack
Display (224-PCMTX4, 224-PCMTX8)	LCD: elapsed run time up to 9999 minutes (approximately one week) Operating mode, battery condition, flow fault; run time retained after a shutdown
Sample hold (224-PCMTX4, 224-PCMTX8)	Pauses and restarts the pump and timer during a sample
Timer (224-PCMTX8)	Run time programmable in minutes, timed shutdown; delayed start up to 9999 minutes Intermittent sampling: calculates and controls on/off timing for multiple sample periods

Compliance

Markings	II 1G Ex ia IIC T4 Ga (all models)
ATEX	SIRA 02ATEX2157; Directive 2014/34/EU; EN IEC 60079-0:2018 and EN 60079-11:2012
UKEX	CSAE 22UKEX1387; UK 2016 No. 1107; EN IEC 60079-0:2018 and EN 60079-11:2012
Hazardous areas	Zones 0, 1 and 2; flammable gases and vapours; groups IIA, IIB and IIC; T1–T4
Certified ambient temperature	–20 °C to +40 °C only
Marks	CE and UKCA
Safety related device	Not assessed as a safety related device (Directive 2014/34/EU Annex II, clause 1.5)
UL variants	A variant range is UL certified; not for hazardous areas in Europe or the UK Components must not be interchanged between the UL and ATEX/UKEX variants

Spare parts

Case and controls	P22433C: keypad cover plate; P22433RGY: cap screws, set of 2 P22433ES: external screw pack; P22433L: flow meter assembly P22419MTX: battery pack, 4.8 V, 2.0 Ah, NiMH
Inlet filter	P22409: inlet filter and O-ring kit, 3 of each P2240901: inlet filter, pack of 10 P22417D: filter housing assembly with 1 filter and 1 O-ring
Pump unit	P22417F: valve plate assembly, set of 2; P22417H: yoke / diaphragm assembly P22417G: pump body; P22417K: pulsation dampener, set of 2 P22417J: regulator assembly; P22417C: pressure (exhaust) port fitting
Internal parts	The complete range goes only to the manufacturer's authorised service centres; for parts not listed, ask Analyt-MTC

Models and ranges

Model	Order code	Control and display
Standard	224-44MTX	Simple on/off control
Intermediate	224-PCMTX4	On/off control, sample hold, elapsed run time display
Deluxe	224-PCMTX8	Full timer control and timer display

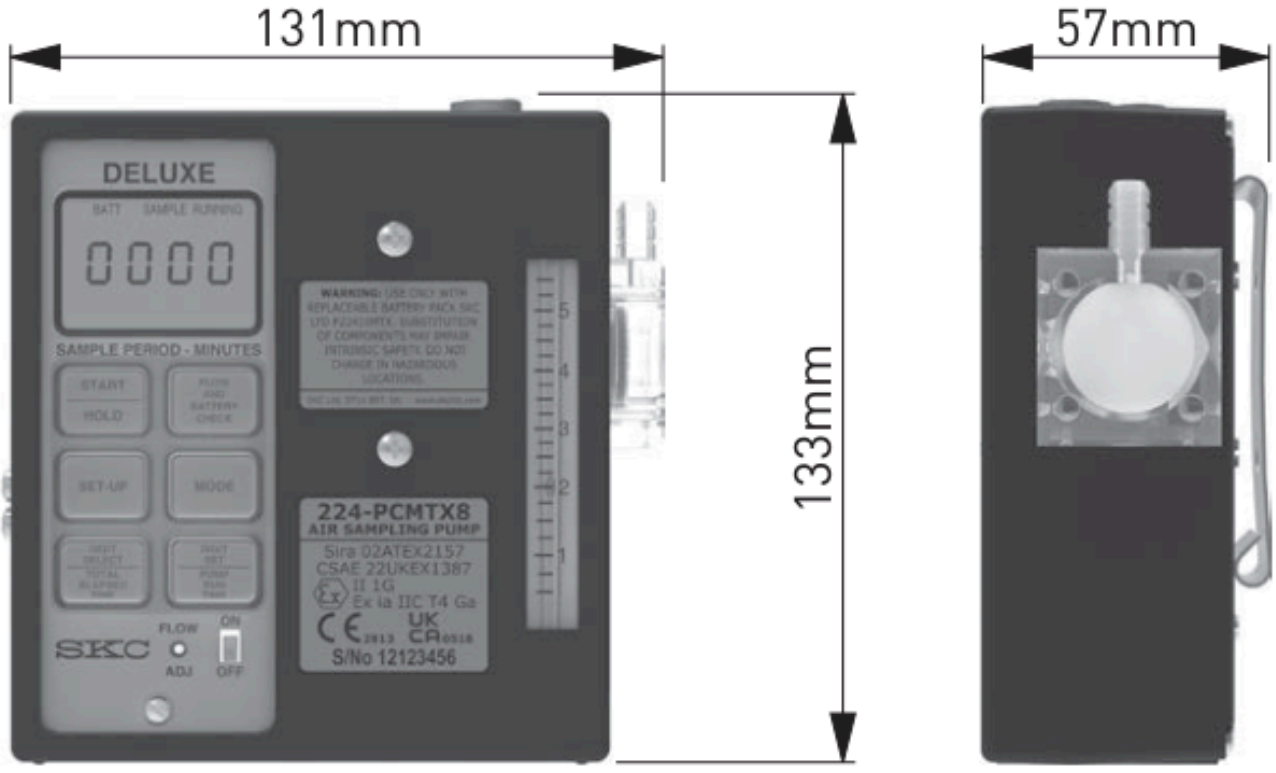
Safe use

Hazardous areas	Do not charge the battery pack in a hazardous area Use only SKC approved chargers designated for the model
Damage	Do not use a pump damaged in a way that could invalidate intrinsic safety Example: a cracked battery pack enclosure that exposes components or cells
Site suitability	If unsure whether the pump suits your environment, check its intrinsic safety rating with your site manager before use
Sampling care	Never run the pump long term without a tube or filter medium in place Long-term colour change tubes: use a tandem tube holder with trap tube Impingers: fit a trap before the pump inlet; set the flow below 1 L/min first

Compensation range

Flow rate (L/min)	Back pressure (inH_2O)
1	5–30
2	0–25
3	0–20
4	0–10

Dimensions



Front and side views with the outer dimensions, from the manufacturer's operating instructions.

Pumps and kits

Kit	Contents	Standard, order code	Intermediate, order code	Deluxe, order code
Pump only	Pump, NiMH battery pack, tool kit, manual	224-44MTX	224-PCMTX4	224-PCMTX8
Basic kit, 1 pump	Single charger, 1 m tubing, guide, carry case	224-44MTXK	224-PCMTX4K	224-PCMTX8K
Basic kit, 5 pumps	Five station charger, 1 m tubing per pump, carry case	224-44MTXK5	224-PCMTX4K5	224-PCMTX8K5
Dust kit, 1 pump	Basic kit plus IOM sampler, 5 cassettes, foams, Calidaptor	224-44MTXKP	224-PCMTX4KP	224-PCMTX8KP
Dust kit, 5 pumps	5 IOM samplers, 15 cassettes, foams, Calidaptor	224-44MTXK5P	224-PCMTX4K5P	224-PCMTX8K5P
Vapour kit, 1 pump	Basic kit plus tube holder, tube cover, tube breaker	224-44MTXKV	224-PCMTX4KV	224-PCMTX8KV
Vapour kit, 5 pumps	5 tube holders, 5 tube covers, tube breaker	224-44MTXK5V	224-PCMTX4K5V	224-PCMTX8K5V
Combined kit, 1 pump	Dust and vapour accessories as above	224-44MTXKC	224-PCMTX4KC	224-PCMTX8KC
Combined kit, 5 pumps	Dust and vapour accessories as above, for 5 pumps	224-44MTXK5C	224-PCMTX4K5C	224-PCMTX8K5C

Order from Analyt-MTC with the order codes. Kits add the Step by Step Guide and the operating manual.

Dust sampling accessories

Order code	Description
225-70A	IOM sampler, plastic, plastic cassette, clip
225-76A	IOM sampler, stainless steel, steel cassette, clip
225-79A	IOM sampler, plastic, stainless steel cassette, clip
225-71A	IOM plastic cassette with cap and clip
225-75A	IOM stainless steel cassette with cap and clip
391-01	Calidaptor flow calibration adapter for IOM

Order code	Description
225-772	IOM foam plug, pack of 10
225-69	Cyclone sampler, plastic, plastic cassette for 25 mm filters
225-69-37	Cyclone sampler, plastic, plastic cassette for 37 mm filters
225-62	Cyclone cassette, 25 mm filters, with clip
225-62-37	Cyclone cassette, 37 mm filters, with clip
225-67-10	Filter transport cassette, 25 mm, pack of 10

Gas and vapour sampling accessories

Order code	Description
224-26-01	Adjustable low flow adapter / tube holder, single
224-26-02	Adjustable low flow adapter / tube holder, double
224-26-03	Adjustable low flow adapter / tube holder, triple
224-26-04	Adjustable low flow adapter / tube holder, quadruple
224-29A	Protective cover type A, 6 mm × 70 mm
224-29B	Protective cover type B, 8 mm × 110 mm

Order code	Description
224-29C	Protective cover type C, 10 mm × 150 mm
224-29D	Protective cover type D, 10 mm × 220 mm
224-29P	Protective cover for low volume PUF tubes
224-29V	Tube holder for OVS tube
Ask Analyt-MTC	Tube tip breaker

Key accessories

Single battery charger, 100–240 V, UK/EU/US/AUS plugs	223-203A
Five station battery charger, 100–240 V, UK/EU/US/AUS plugs	223-113A
Battery eliminator, 230 V, EU 2-pin plug	223-305B
Battery eliminator, 230 V, UK 3-pin plug	223-305C
chek-mate flowmeter, 20–500 mL/min, ±1 % of reading	375-00205
chek-mate flowmeter, 0.5–5.0 L/min, ±1 % of reading	375-0550
Rotameter, 20–250 mL/min, ±2.5 % of full scale	393-002025
Rotameter, 0.3–3.4 L/min, ±2.5 % to VDI/VDE 3513-2:2008	393-0334

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Sales, service and calibration

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