ANALYT MESSTECHNIK



OPERATING MANUAL

SKC BioLite+ Air Sampling Pump

Safe set-up, flow adjustment and back pressure reading with the BioLite+ mains air sampling pump for the BioSampler, up to 62 L/min, with troubleshooting, technical data and ordering information.

AMTC-MN-0041

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About this manual

The SKC BioLite+ is a mains-powered air sampling pump built for the SKC BioSampler, the glass impinger that collects airborne bacteria, fungal spores and other bioaerosols into a liquid. It draws up to 62 L/min, and a gauge on the front shows the vacuum behind the sampler, so you can see when the BioSampler has reached sonic flow.

This manual covers safe installation, the parts of the pump, how to start it and set the flow, and what to do when it does not run as expected. The last chapters give the technical data, the order numbers of accessories and spare parts, and how to have the pump serviced. How to calibrate and run the sampler itself is described in the BioSampler operating manual.

Read Safety (p. 5) before you use the pump for the first time. For a first run, continue with Operation (p. 8).

The manual applies to both versions of the pump, Cat. No. 228-9620 (230 V) and Cat. No. 228-9615 (120 V), and to the kits built around them. Analyt-MTC supplies, services and supports the pump; for questions, repairs and spare parts see Service, warranty and contacts (p. 12).

Keep this manual for the lifetime of the product. The current revision is on the product page at analyt-mtc.com.

Abbreviations

Abbreviation	Meaning
dBA	Decibel, A-weighted (sound level)
IEC	International Electrotechnical Commission (here: the standard mains inlet)
IP	Ingress protection (IP code of the casing)
RH	Relative humidity
WEEE	Waste electrical and electronic equipment

How this manual marks information

⚠ WARNING

A hazardous situation which, if not avoided, could result in death or serious injury.

NOTICE

Practices not related to personal injury — damage to the product, the process or the sample.

Note
Information that helps understanding; never a hazard.

Numbers in bold in the text, such as **2**, refer to the parts in Figure 1 (p. 7). Back pressure is given in millibar (mbar) in the technical data; the sonic-flow point of the BioSampler is given in inches of mercury (inHg), as the pump's instructions state it.

Document information

Title	SKC BioLite+ Air Sampling Pump — Operating manual
Document number	AMTC-MN-0041
Revision	Rev. 2 — October 2026
Applies to	BioLite+ air sampling pump, Cat. No. 228-9620 and 228-9615, and kits 228-9620KB, 228-9620KBD, 228-9615KB, 228-9615KBD
Language	English
Manufacturer	SKC Inc.

Revision history

Rev.	Date	Change
2	October 2026	Quality programme: new document type, number and identity pages.
1	October 2026	First issue.

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Contents

1 **Safety** 5
- Intended use 5
- Mains supply 5
- Water and dust 5
- Ventilation 5

2 **Product description** 7
- The two versions 7
- Parts of the pump 7
- Controls and connections 7

3 **Operation** 8
- Warming up 8
- Connecting the sampling train and setting the flow 8
- Reading the back pressure gauge 8
- Switching off 8

4 **Troubleshooting** 9
- Problems and remedies 9
- Checking a fuse 9

5 **Specifications** 10
- Flow and performance 10
- Electrical 10
- Operating conditions 10
- Mechanical 10

6 **Ordering information** 11
- Pumps and kits 11
- Accessories 11
- Spare parts 11

7 **Service, warranty and contacts** 12
- Service interval 12
- Returning a pump 12
- Warranty 12
- Pump record 13
- Disposal 13

CHAPTER 1

Safety

Read this chapter before you use the pump for the first time. The BioLite+ runs on mains power and has a rotary vane pump inside a ventilated steel case. The rules in this chapter protect you from electric shock and keep the pump in working order. Using the pump against them — on the wrong mains supply, with blocked ventilation, opened under mains power or wet inside — voids the warranty.

Intended use

The BioLite+ is a mains-powered air sampling pump built for the SKC BioSampler. It draws up to 62 L/min, and its gauge shows the vacuum behind the sampler. Use it as this manual describes, only on the mains supply its version is built for (see Mains supply (p. 5)), with its ventilation clear and where no water can get into the casing.

Using the pump on another mains supply, with blocked ventilation, opened while the mains lead is connected or where water can get into the casing is misuse: the sections below explain the hazards.

Mains supply

The pump is built in two versions for different mains supplies: Cat. No. 228-9620 for 230 V ~ 50 Hz and Cat. No. 228-9615 for 120 V ~ 60 Hz (see The two versions (p. 7)). The version is printed on the rating label at the rear of the pump.

⚠ WARNING

Parts inside the pump casing carry mains voltage. Touching them can cause an electric shock. Never open the pump casing while the mains lead is connected to the pump. Connect the pump only to the mains supply its version is built for.

Water and dust

Note

The casing is rated IP20 and is neither waterproof nor splash-proof. Using the pump where water can get into the casing voids the warranty. Do not use the pump anywhere water could get into the casing — in rain, near spraying or splashing liquids, or where it could stand in water.

Note

The rotor vanes of the pump are made of graphite and wear slowly in normal use. A small amount of carbon dust therefore leaves the pump outlet (**7**) while the pump runs. This is normal.

Ventilation

A fan draws cooling air in at the rear of the pump (**11**), and the air leaves through the grilles on both sides (**6**).

Note

Blocked side grilles or a blocked fan inlet stop the cooling air. A pump that overheats stops (see Troubleshooting (p. 9)). Keep the side grilles and the fan inlet at the rear clear while the pump runs. Do not stand the pump against a wall, cover it or put it in a closed box.

CHAPTER 2

Product description

The two versions

The two versions differ only in their mains supply and the mains leads that come with them. The rating label at the rear of the pump shows its catalogue number and serial number. Kits that combine the pump with a BioSampler are listed in Pumps and kits (p. 11).

Order code	Mains supply	Mains leads supplied
228-9620	230 V ~ 50 Hz	Two leads: 3-pin UK plug and 2-pin EU plug
228-9615	120 V ~ 60 Hz	One lead: 3-pin USA plug

Parts of the pump

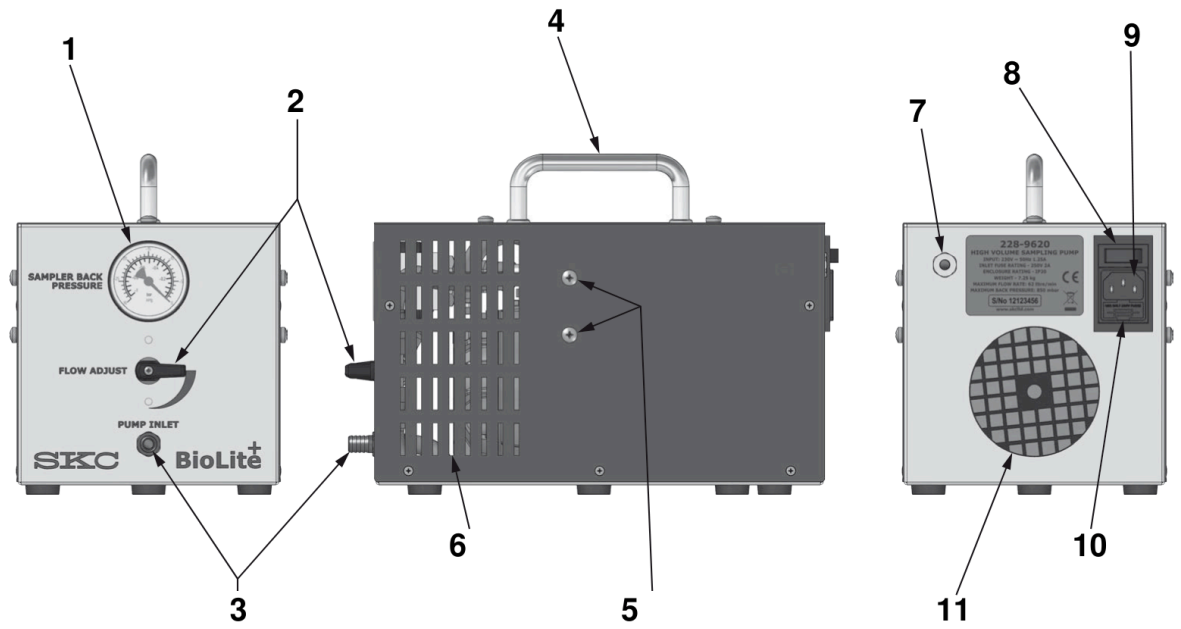


Figure 1. Pump parts. Left: front; centre: side; right: rear.
1 Back pressure gauge · **2** Flow adjuster · **3** Pump inlet (tubing connector) · **4** Carry handle · **5** Accessory mounting points · **6** Cooling air outlet grille · **7** Pump outlet · **8** On/off switch · **9** Mains inlet (IEC) · **10** Fuse holder · **11** Cooling fan inlet

Controls and connections

Part	What it does
1 Back pressure gauge	Shows the vacuum the pump draws behind the sampling train. The more the sampling train restricts the flow, the higher the reading. With a BioSampler, it tells you whether the sampler is in sonic flow (see Reading the back pressure gauge (p. 8)).
2 Flow adjuster	Sets the flow. Turn it clockwise to reduce the flow and counter-clockwise to increase it. Fully counter-clockwise, the adjuster is fully open.
5 Accessory mounting points	Two mounting points in the side of the case for the BioSampler mounting bracket, Cat. No. 228-9611, which holds a BioSampler on the pump.
10 Fuse holder	Holds the inlet fuse: 2 A in the 228-9620, 4 A in the 228-9615.

CHAPTER 3

Operation

Let the pump warm up with the flow adjuster open, then connect the sampling train, set the flow and let it settle before you measure. Before you start, stand the pump on a firm surface with the side grilles and the rear fan inlet free (see Ventilation (p. 5)), and check that the mains supply matches its version (see Mains supply (p. 5)).

Warming up

1. Plug the mains lead into the mains inlet **9** at the rear of the pump, then into a mains socket. The 228-9620 comes with a UK and an EU lead: use the one that fits your sockets.
2. Turn the flow adjuster **2** counter-clockwise as far as it goes, so that it is fully open.
3. Switch on the mains supply, then switch on the pump with the on/off switch **8** at the rear.
4. Let the pump run for 5 to 10 minutes to stabilise. Do not adjust the flow during this time.
5. Switch the pump off with the on/off switch **8**.

Connecting the sampling train and setting the flow

> **Note**
> A fully closed flow adjuster or a blocked sampling train makes the pump overheat. The pump then stops and must cool down before it can be restarted. Do not run the pump with the flow adjuster fully closed or against a blocked sampling train.

1. Connect the tubing from the sampling train to the tubing connector of the pump inlet **3**.
2. Switch on the pump with the on/off switch **8**.
3. If the flow needs adjusting, turn the flow adjuster **2**: clockwise to reduce the flow, counter-clockwise to increase it.
4. Let the pump run for 5 minutes so that the flow can settle. Only then take readings to verify the flow rate.

Reading the back pressure gauge

The back pressure gauge **1** shows the vacuum (suction) the pump draws because the sampling train restricts the flow. For the SKC BioSampler, this reading tells you whether the sampler works correctly: the BioSampler reaches sonic flow once the suction is 15 inHg or more. In sonic flow, the sampler's nozzles fix its flow rate. How to set and check this is described in the BioSampler operating manual.

The more suction the sampling train needs, the less air the pump can move. Figure 2 (p. 10) shows the pump's flow at each back pressure, from 62 L/min with an open inlet down to no flow at 850 mbar.

Switching off

Switch the pump off with the on/off switch **8**. If you will not use it again soon, unplug the mains lead.

CHAPTER 4

Troubleshooting

Problems and remedies

Problem	Remedy
The pump does not run.	1. Check that the mains socket has power. 2. Check that the on/off switch **8** is on. 3. With the UK 3-pin lead: check the fuse in the plug and replace it if it has blown. 4. Check the inlet fuse in the fuse holder **10** at the rear of the pump and replace it if it has blown (see Checking a fuse (p. 9)).
The pump does not reach the flow rate you need.	1. Check the sampling train for leaks. 2. If the sampling train is tight, the rotor vanes may be damaged or badly worn. Send the pump to Analyt-MTC for service.
The pump stops because it is too hot.	1. Check the sampling train for blockages and clear them. 2. Check that the flow adjuster **2** is not fully closed. 3. Let the pump cool down before you switch it on again.
The pump does not run but hums.	The rotor vanes have jammed. Switch the pump off at once and send it to Analyt-MTC for service.

NOTICE

A pump that hums without running has jammed rotor vanes, and leaving it switched on can damage the pump. Switch it off immediately. Do not try to free the vanes yourself.

If none of these remedies helps, contact Analyt-MTC (see Service, warranty and contacts (p. 12)).

Checking a fuse

The pump has an inlet fuse in the fuse holder **10**, below the mains inlet. The UK mains lead of the 228-9620 has a second fuse in its plug.

WARNING

The fuse holder sits below the mains inlet. Opening it while the mains lead is connected can cause an electric shock. Switch the pump off and unplug the mains lead from the pump before you open the fuse holder.

Note

Replace a blown fuse only with an identical fuse. The inlet fuse is 2 A in the 228-9620 and 4 A in the 228-9615 (see Spare parts (p. 11)). A fuse that blows again points to a fault: contact Analyt-MTC.

CHAPTER 5

Specifications

Flow and performance

Maximum flow rate	62 L/min
Maximum back pressure	850 mbar (suction)
Flow at a given back pressure	See Figure 2 (p. 10)
Flow adjustment	Manual flow adjuster on the front panel
Indicator	Back pressure gauge (vacuum) on the front panel
Noise level	61–66 dBA at 1 m, depending on flow rate and back pressure

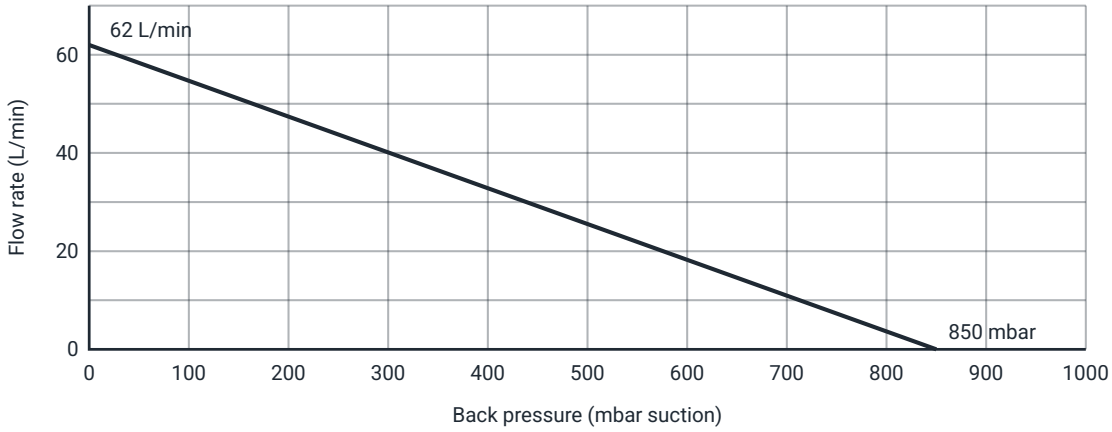


Figure 2. Flow rate of the pump against the back pressure (suction) of the sampling train.

Electrical

Order code	Mains supply	Maximum input current	Inlet fuse
228-9620	230 V ~ 50 Hz	1.25 A	2 A
228-9615	120 V ~ 60 Hz	3.15 A	4 A

Operating conditions

Temperature	0–40 °C
Humidity	0–95 % RH
Enclosure rating	IP20 — not water- or splash-proof (see Water and dust (p. 5))

Mechanical

Dimensions (W × H × D)	162 × 209 × 303 mm
Weight	228-9620: 7.25 kg (15.95 lb) · 228-9615: 7.42 kg (16.32 lb)
Case	Steel, with integral carrying handle
Pump	Rotary vane pump with four graphite rotor vanes

CHAPTER 6

Ordering information

Order from Analyt-MTC with the order codes. For sampling media and other samplers, ask Analyt-MTC.

Pumps and kits

Description	Order code
BioLite+ pump, 230 V, with 3-pin UK and 2-pin EU mains leads	228-9620
BioLite+ pump, 120 V, with USA mains lead	228-9615
BioLite+ BioSampler Kit: pump, 1 BioSampler with collection vessel and cap, 1 additional 20 mL collection vessel with cap, 1 mounting bracket, tubing and adapters, rotameter	228-9620KB (230 V) 228-9615KB (120 V)
BioLite+ BioSampler Deluxe Kit: pump, 1 BioSampler, two 20 mL collection vessels with caps, 1 case with mounting rod, 1 ViaTrap (120 mL), tubing and adapters, rotameter	228-9620KBD (230 V) 228-9615KBD (120 V)

Accessories

Description	Order code
BioSampler with 20 mL collection vessel, three parts: inlet section, nozzle section, collection vessel	225-9595
BioSampler with 5 mL collection vessel, three parts: inlet section, nozzle section, collection vessel	225-9593
BioSampler mounting bracket for the BioLite+ and BioLite pumps	228-9611
Tubing adaptor, BioLite+ pump to BioStage impactor	Ask Analyt-MTC

Spare parts

Description	Order code
Inlet fuse 2 A, for the 228-9620 only	P228920
Inlet fuse 4 A, for the 228-9615 only	P228921
Pump rotor vanes, set of four — fitted during service by Analyt-MTC	P228922

CHAPTER 7

Service, warranty and contacts

Analyt-MTC is your contact for everything concerning the BioLite+: technical questions, accessories and spare parts, servicing, repairs and warranty claims. Apart from changing a fuse (see Checking a fuse (p. 9)), all work on the pump is service work.

Contact

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Before you contact Analyt-MTC

Have the following at hand so that Analyt-MTC can help you quickly:

- the catalogue number and serial number from the rating label at the rear of the pump;
- the date of purchase and of the last service (see Pump record (p. 13));
- what happened, and what the back pressure gauge showed.

Service interval

Have the pump serviced at least once a year. The first service is due one year after the date of purchase, then every year on that date. Decide from your own risk assessment whether your use of the pump calls for more frequent servicing. Analyt-MTC arranges the service.

Returning a pump

Before you send a pump for service, repair or under warranty, ask Analyt-MTC how to return it and what to include.

Warranty

The warranty terms of Analyt-MTC apply. Make warranty claims to Analyt-MTC. The warranty is void if the pump has been used against the rules in Safety (p. 5).

Pump record

Keep the details of your pump and its services here.

Cat. No. (model)	
Serial number	
Date of purchase	

No.	Service date	Notes	No.	Service date	Notes
1			7		
2			8		
3			9		
4			10		
5			11		
6			12		

Disposal

The pump carries the crossed-out wheeled-bin symbol: it falls within the scope of the EU WEEE Directive. At the end of its life, do not put it in household waste; dispose of it in an environmentally sound way through a collection point for electrical equipment. For details on how to comply with the directive, contact Analyt-MTC.



Figure 3. WEEE marking on the pump.

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