

OPERATING MANUAL

SKC Flite4 High Volume Sample Pump

Battery and charging, flow setting, programmed and manual sampling with the Flite4 high volume air sampling pump, 2 to 20 L/min, with care, troubleshooting, spare parts and accessories.

AMTC-MN-0042

Rev. 2 · October 2026

About this manual

The SKC Flite4 is a high volume air sampling pump for flows from 2 to 20 L/min. It runs from an internal 12 V lead/acid battery or from an external supply, and you program it from a four-key keypad and a two-line display: a manual run, a timed run, a timed run with a delayed start, or a series of repeat runs. Its typical use is static sampling on filters, such as asbestos air monitoring with a cowled sampling head.

This manual takes you from fitting the battery to a finished sample: charging, setting the flow with a flowmeter, programming the sample and running it. Later chapters cover care and storage of the battery, troubleshooting, the technical data and the order numbers of spare parts and accessories.

Read Safety (p. 6) before you use the pump for the first time. To start sampling quickly, follow Installation (p. 11), Setting up the flow verification train (p. 14) and Running a sample (p. 17) in that order.

The manual applies to the Flite4 pump, Cat. No. 901-4011, to the kit 901-4011K built around it, and to the twin-port version 901-4012. Analyt-MTC supplies, services and supports the pump; for questions, repairs and spare parts see Service, warranty and contacts (p. 27).

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

Conventions in this manual:

- Keys, buttons and menu entries are printed like this: **Select**.
- A menu path such as **Setup** › **RunTime** › **RunDelay** means that you open each entry in turn.

Abbreviations

Abbreviation	Meaning
LED	Light-emitting diode
RH	Relative humidity

How this manual marks information

NOTICE

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

Note
Information that helps understanding; never a hazard.

The keys are **Select**, **Enter**, **Up** and **Down**; options on the display are written in bold as well. Text that appears on the display is set in `MONOSPACE`.

Document information

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

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CHAPTER 1

Safety

Read this chapter before you use the pump for the first time. The Flite4 casing is rated IP20 and gives no protection against water, and the pump runs on a lead/acid battery that is sensitive to overcharging and deep discharge. The rules in this chapter keep dust and water out of the pump mechanism and protect its lead/acid battery. Not following them can affect warranty claims (see Warranty (p. 27)).

Intended use

The Flite4 is a high volume air sampling pump for flows from 2 to 20 L/min, used for static sampling on filters, such as asbestos air monitoring with a cowled sampling head. Use it only as this manual describes.

Rules for everyday use

NOTICE

Dust and water can damage the pump, and so can a battery or charger not made for it. Damage caused by not following these rules can affect a warranty claim. Never run the pump without a filter in line. The filter keeps dust out of the pump mechanism. Keep the rubber dust cap on the inlet hose nipple whenever the pump is not in use. Keep the screw-in cap on the charging/power socket except while a charger or external supply is connected, and screw it back on immediately afterwards. The casing is rated IP20: it is not water- or splash-proof. Do not use the pump where water can get into the casing, and keep water out when you clean it. Use only the battery and the charger made for the Flite4: battery P901402 inside the pump, charger 901-410 for charging (see Accessories (p. 26)).

Damage caused by not following these rules can affect a warranty claim. Analyt-MTC's warranty terms apply.

Battery and power

NOTICE

Overcharging overheats the battery, drives gas out of the electrolyte and shortens its life. A battery that is not centred can be hit by the casing screws. Charge only with charger 901-410: it detects a full battery and switches to a trickle charge by itself. When you fit the battery, leave an equal gap at both ends of it. The casing screws can then be screwed in fully without hitting the battery (see Fitting the battery (p. 11)). The charger charges the battery only while the pump is not running. It cannot be used to extend a run; for long runs use an external supply (see External power (p. 12)).

NOTICE

If the external supply is disconnected and no internal battery is fitted, the pump can lose the sample program and the run-time data. Keep the internal battery fitted when the pump runs from a mains adapter or an external battery.

What you may service yourself

You may fit and connect the internal battery, which means opening the blue casing cover as described in Fitting the battery (p. 11). Repairs to the pump head, motor and control board are service work:

contact Analyt-MTC (see Service, warranty and contacts (p. 27)). The manufacturer recommends servicing the pump once a year.

At the end of its life the pump and its battery are disposed of separately; see Disposal (p. 28).

CHAPTER 2

Product description

Versions and delivery

The pump is delivered without a battery fitted. It comes with a rubber dust cap on the inlet hose nipple, a screw-in dust cap on the charging/power socket, and the Pozidriv PZ1 screwdriver for the casing screws. If anything is missing, contact Analyt-MTC (see Service, warranty and contacts (p. 27)).

Order code	Contents
901-4011	Flite4 high flow sample pump, 2–20 L/min, without battery
901-4011K	Flite4 sample pump kit: pump with 7 Ah battery, single charger and 1 m of Tygon tubing
901-4012	Flite4 twin-port high flow sample pump, 2–20 L/min, without battery; as 901-4011 with an additional outlet hose nipple

The pump on its own needs the internal battery P901402 and the charger 901-410, ordered separately (see Accessories (p. 26)).

Parts of the pump



Figure 1. Front of the pump.
1 Inlet hose nipple (“Pump Inlet”) · **2** Display · **3** Charging/power socket (“Charger/Power”) · **4** Keypad · **5** Casing screws (3 on each side) · **6** Screw-in cap of the charging/power socket · **7** Carry handle · **8** Casing feet · **9** Outlet hose nipple (twin-port version only)

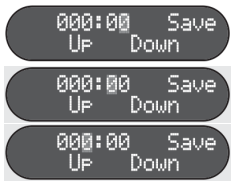
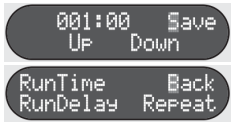
The keypad

The display has two lines. The bottom line, and on some screens the top line too, shows the options you can choose; a flashing cursor marks the selected one. Four keys operate the pump:

	Key	What it does
	**Select**	Moves the cursor to the next option. On a number screen, moves to the next digit and finally to **Save**.
	**Enter**	Accepts the selected option and opens the next screen; on **Save**, stores the value you entered.
	**Up**	Increases the selected digit. On the `SET FLOW` screen, increases the flow rate; hold the key down to increase it quickly.
	**Down**	Decreases the selected digit or the flow rate; hold the key down to decrease the flow quickly.
	Select + **Enter**	Pressed together while a sample is running or counting down: opens the options for that sample (hold, continue, reset). On an end or fault screen: returns to the main menu.

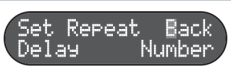
Entering a time or a number

Times are entered as hours and minutes, `000:00`, one digit at a time.

Step	Action	Display
1	Press **Select** until the cursor flashes on the digit you want to change.	
2	Set the digit with **Up** or **Down**. Repeat steps 1 and 2 for each digit — for one hour, for example, `001:00`.	
3	Press **Select** until the cursor is on **Save**, then press **Enter**. The value is stored and the pump returns to the menu you came from.	

The menus

Everything starts from the main menu, which appears when you wake the pump. **Back** on a sub-menu returns to the menu above it.

Display	Menu	Options
	Main menu	**Run** starts the programmed sample · **Setup** opens the setup menu · **Review** shows the battery status and the programmed sample (see Reviewing the program (p. 17)) · **Sleep** puts the pump to sleep
	Setup menu	**Flow** sets the flow rate · **RunTime** opens the run-time menu · **Clear** deletes the sample program · **Back**
	Run-time menu	**RunTime** sets the duration of a timed run · **RunDelay** sets a start delay · **Repeat** opens the repeat menu · **Back**
	Repeat menu	**Delay** sets the pause between repeat runs · **Number** sets the number of runs · **Back**

Sleep mode

When the pump is not in use, put it into sleep mode to save the battery: the display then shows `SKC FLITE4 SLEEPING`, and its backlight dims after 5 minutes.

Action	Display
To wake the pump: press **Enter**, **Select**, **Enter** in this order. The main menu appears.	
To put it to sleep: in the main menu, press **Select** until **Sleep** is selected, then press **Enter**.	

CHAPTER 3

Installation

The pump runs from an internal 12 V, 7 Ah sealed lead/acid battery, Cat. No. P901402, which you fit yourself. For runs longer than one battery charge, connect a mains adapter or a high-capacity external battery to the charging/power socket. To store the pump for a long time, see Storing the pump (p. 20) (Maintenance); the storage temperature is −5 to +50 °C (see Specifications (p. 22)).

Fitting the battery

You need the Pozidriv PZ1 screwdriver supplied with the pump and a battery P901402.

1. Undo the six casing screws, three on each side of the case (5 in Figure 1 (p. 8)), and lift off the blue casing cover.
2. Take the two protective covers off the battery terminals.

NOTICE

If the battery sits against one side of the case, the casing screws on that side cannot be screwed in fully without damaging it. Keep the gaps at both ends equal.

3. Set the battery into the rear compartment of the case as in Figure 2. Centre it so that the gaps between its ends and the sides of the case are equal.
4. Connect the red cable from the pump's control board to the red “+” terminal of the battery, and the black cable to the black “−” terminal.
5. Refit the casing cover and tighten the six screws.
6. Charge the new battery fully before first use (see Charging the battery (p. 11)).

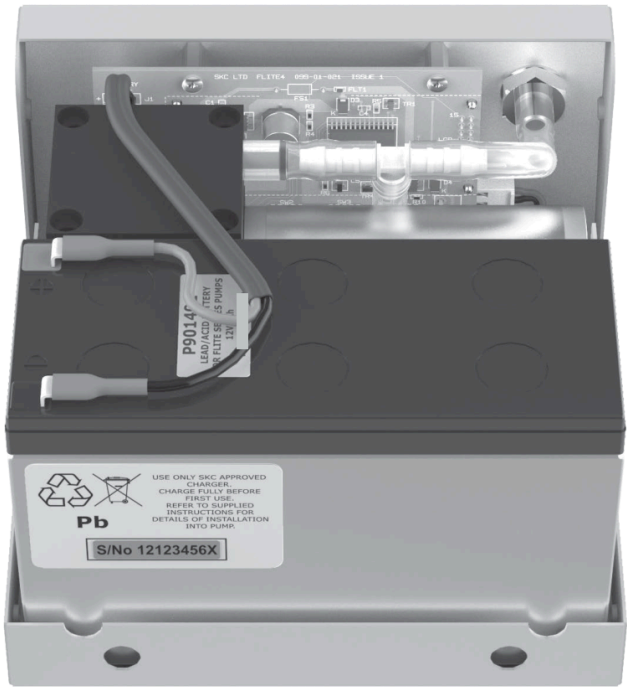


Figure 2. Battery P901402 in the rear compartment, cables connected, casing cover removed.

Charging the battery

Charge the battery fully before the first use, ideally overnight. Use only charger 901-410; it works on 100–240 V, 50/60 Hz mains and comes with mains plugs for the UK, Europe, the USA and Australia/New Zealand. Charge within −5 to +45 °C.

1. Fit the mains plug for your country to the charger.
2. Unscrew the dust cap from the charging/power socket of the pump. Push the charger's output connector into the socket and screw it tight, so that it cannot come loose while charging.
3. Plug the charger into a mains outlet and switch the outlet on. The charger LED lights amber: the battery is charging at full rate.

4. Leave the pump to charge until the LED turns green. A fully discharged battery takes about 10 hours. On green, the charger has switched to a trickle charge.
5. Switch off the mains outlet and unscrew the charger connector from the pump.
6. Screw the dust cap back onto the charging/power socket.

> **Note**
> The charger charges only while the pump is not running. It does not extend the run time of a sample.

Checking the battery

The battery status is the first screen of **Review**: in the main menu, select **Review** and press **Enter**. The display shows `Battery Status` with up to four arrows and a word; press **Enter** to go on through the review screens (see Reviewing the program (p. 17)).

Display	Status	Charge remaining
	Good	75–100 %
	Good	50–75 %
	Medium	25–50 %
	Low	below 25 %
	Exhausted	fully discharged

Flat battery

When the battery is exhausted, the display shows `Flat Battery CONNECT CHARGER`. The screen appears:



- when you wake the pump from sleep mode;
- when you try to start a sample — the pump does not run on an exhausted battery;
- during a sample — the pump stops by itself and keeps the elapsed run time in its memory.

> **Note**
> The flat-battery screen clears only when the battery is charged to at least 75 %. Charge it fully.

External power

For long runs, power the pump through the charging/power socket from one of these supplies (order numbers in Accessories (p. 26)):

- **Mains adapter 901-411**, 100–240 V, 50/60 Hz mains, output 12 V DC, 2 A;
- **an external 12 V lead/acid battery** of high capacity, such as P901107 (12 Ah), connected with the external battery hookup cable 901-212 (crocodile clips).

How long one battery charge lasts at different flows is listed under Typical run times (p. 23).

NOTICE

If the external supply is disconnected and the internal battery is not fitted, the pump can lose the sample program and the run-time data. Keep the internal battery P901402 fitted while you use an external supply.

CHAPTER 4

Operation

Operation runs in three steps: set the flow with a calibrated flowmeter and the sampling head in line; program a run time, a start delay or repeat runs if the sample needs them; then start the sample with **Run** in the main menu.

The sample volume is flow rate times run time, so set the flow with a calibrated flowmeter and with the sampling head and a filter in line. The pump has no flow readout in litres per minute: the `SET FLOW` screen shows the flow only as a bar of arrows, and the flowmeter is your reading.

Setting up the flow verification train

1. Fit a new filter into the sampling head.
2. Connect the outlet of the sampling head to the inlet hose nipple of the pump with a length of flexible tubing.
3. Connect the inlet of the sampling head to the outlet of a calibrated flowmeter, such as a chek-mate electronic flowmeter or a rotameter. For cowled asbestos heads, use the flow calibration adapter 391-05.

Flowmeter	Range	Order code
chek-mate electronic flowmeter, accuracy ±1 % of reading	5–30 L/min	375-50300
Pulsation dampener, to use with the chek-mate	—	375-150
Rotameter, accuracy 2.5 % to VDI/VDE 3513-2:2008	1.0–13.0 L/min	393-1130
Rotameter, accuracy 2.5 % to VDI/VDE 3513-2:2008	2.0–26.0 L/min	393-2260

Setting the flow

Step	Action	Display
1	In the main menu, select **Setup** and press **Enter**.	SELECT Sleep Run Setup Review Set Clear Back Flow RunTime
2	Select **Flow** and press **Enter**. The pump starts, and the display shows `SET FLOW` with a bar of arrows.	Set Clear Back Flow RunTime SET FLOW Back >_____
3	Watch the flowmeter and set the flow your method requires: **Up** increases the flow and adds arrows, **Down** decreases it and removes arrows. Hold a key down to change the flow quickly. At the limits of the range the bar ends in `Max` or begins with `Min`.	SET FLOW Back >>>>>>>>>>____ SET FLOW Back >>>>>>>>>>>Max SET FLOW Back >>>>>_____ SET FLOW Back Min_____
4	When the flowmeter shows the required flow, press **Enter**. The flow setting is stored and the main menu appears.	SET FLOW Back >>>>>>_____ SELECT Sleep Run Setup Review

Step	Action	Display
5	Disconnect the flowmeter from the sampling head. Take out the filter you used for setting the flow and fit a fresh one.	
6	Fit the sealing cap to the inlet of the sampling head, so that the filter stays clean until sampling starts.	

Note
You can check and correct the flow during a sample without counting the time: see Holding, checking the flow and ending a run (p. 17).

Programming a sample

The pump keeps one sample program. Without a program it runs manually until you stop it. A program adds a run time, after which the pump stops by itself, and optionally a start delay and a number of repeat runs with a pause between them. Set the flow first (see Setting the flow (p. 14)).

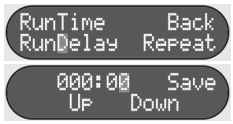
Sample type	Program it like this
Manual run	Clear the program (see Clearing the program (p. 16)). No run time, start delay or repeats may be set.
Single timed run	Set a run time (see Run time (p. 15)).
Timed run with delayed start	Set a run time and a start delay (see Start delay (p. 15)).
Repeat runs	Set a run time, the number of runs and the pause between them (see Repeat runs (p. 16)), and optionally a start delay.

Run time

Step	Action	Display
1	In the main menu, select **Setup** and press **Enter**.	SELECT Sleep Run Setup Review Set Clear Back Flow RunTime
2	Select **RunTime** and press **Enter**. The run-time menu appears.	Set Clear Back Flow RunTime RunTime Back RunDelay Repeat
3	Select **RunTime** again and press **Enter**. The display shows `000:00 Save`.	RunTime Back RunDelay Repeat 000:00 Save Up Down
4	Enter the sample duration in hours and minutes (see Entering a time or a number (p. 9)), select **Save** and press **Enter**. The pump returns to the run-time menu.	001:00 Save Up Down 001:00 Save Up Down RunTime Back RunDelay Repeat

Start delay

A start delay holds the sample back for a set time after you press **Run**, for example `000:30` for 30 minutes.

Step	Action	Display
1	In the run-time menu (**Setup › RunTime**), select **RunDelay** and press **Enter**.	
2	Enter the delay in hours and minutes, select **Save** and press **Enter**. The pump returns to the run-time menu.	

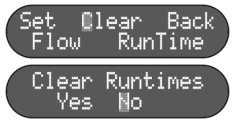
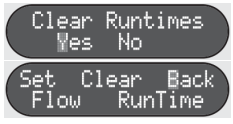
Repeat runs

With repeats set, the pump runs for the programmed run time, pauses for the repeat delay, and runs again, until it has completed the set number of runs. A number of `00` switches repeat runs off; `01` gives a single timed run.

Step	Action	Display
1	In the run-time menu (**Setup › RunTime**), select **Repeat** and press **Enter**. The repeat menu appears.	
2	Select **Delay** and press **Enter**. Enter the pause between two runs in hours and minutes, select **Save** and press **Enter**.	
3	Select **Number** and press **Enter**. The display shows `Number Of Repeat Runs:00`.	
4	Enter the number of runs with **Select**, **Up** and **Down** — for example `06`.	
5	Press **Select** until the cursor is on **Back**, then press **Enter**. The number is stored and the repeat menu appears.	

Clearing the program

Clearing deletes the run time, start delay and repeat settings, and the elapsed run time of the previous sample. Do this before a manual run.

Step	Action	Display
1	In the setup menu, select **Clear** and press **Enter**. The display asks `Clear Runtimes Yes No`.	
2	Select **Yes** and press **Enter**. The program is deleted and the setup menu appears.	

Reviewing the program

In the main menu, select **Review** and press **Enter**. Each further press of **Enter** shows the next screen; screens for settings that are not programmed are skipped. After the last screen the main menu appears again.

Display	Shows
	The battery charge (see Checking the battery (p. 12)). Always shown.
 	The start delay in hours, minutes and seconds; with repeats set, also the repeat counter, for example `R00/06`. Only if a start delay is set.
	The elapsed run time of the previous sample; `000:00:00` if none is stored. Always shown.
	The programmed run time in hours and minutes. Only if a run time is set.
	The number of runs and the repeat delay (`Rept Dly`) in hours and minutes. Only if repeats are set.

Running a sample

You start every sample in the same way, with **Run** in the main menu. What follows depends on the program: a manual run counts up until you end it, a timed run stops by itself, and a delayed or repeated run counts down to its start first.

Before you start

- The flow is set and a fresh filter is in the sampling head (see Setting the flow (p. 14)).
- The program matches the sample you want (see Programming a sample (p. 15)); check it with Review (see Reviewing the program (p. 17)).
- The battery is charged, or an external supply is connected (see Installation (p. 11)).
- The pump stands at the sampling location, and the sealing cap is off the inlet of the sampling head.

If the display shows `Flat Battery CONNECT CHARGER` or a motor fault, the pump stops and keeps the elapsed run time; see Messages on the display (p. 21).

Manual run

Step	Action	Display
1	Wake the pump if it is asleep (see Sleep mode (p. 10)).	
2	In the main menu, select **Run** and press **Enter**. The pump starts; the display shows `ELAPSED RUN TIME` counting up in hours, minutes and seconds.	 
3	To end the sample, hold the run and reset it as described below.	

Holding, checking the flow and ending a run

While a run is in progress, press **Select** and **Enter** together. The display shows `SELECT Hold Continue`.



> **Note**
> The pump keeps running while this screen is shown, but the elapsed run time does not count.

To…	Do this	Display
Go back to the run	Select **Continue** and press **Enter**. The run screen appears again.	SELECT Hold Continue ELAPSED RUN TIME 000:30:18
Stop the pump for a while	Select **Hold** and press **Enter**. The pump stops, and the hold menu shows **Reset**, **Continue**, **Flowset** and the elapsed run time, for example `Reset 001:00:06`.	SELECT Hold Continue Reset 001:00:06 Continue Flowset
Check or correct the flow	In the hold menu, select **Flowset** and press **Enter**. The pump runs and shows `SET FLOW`; the elapsed run time does not count. Read the flow on a flowmeter, correct it with **Up** and **Down**, and press **Enter** to store it. The pump stops and the hold menu appears.	Reset 001:00:06 Continue Flowset SET FLOW Back >>>>>_____ SET FLOW Back >>>>>>_____ Reset 001:00:06 Continue Flowset
Resume the sample	In the hold menu, select **Continue** and press **Enter**. The pump restarts and the elapsed run time counts on.	Reset 001:00:06 Continue Flowset ELAPSED RUN TIME 001:00:09
End a manual run	In the hold menu, select **Reset** and press **Enter**. The main menu appears. Note the elapsed run time first — it is also kept as `Previous Run` in Review (see Reviewing the program (p. 17)).	Reset 002:00:03 Continue Flowset SELECT Sleep Run Setup Review

Single timed run

Step	Action	Display
1	Program a run time without start delay or repeats (see Run time (p. 15)).	
2	In the main menu, select **Run** and press **Enter**. The display shows `Single Timed Run` with the elapsed time counting up. **Select** + **Enter** opens the same options as for a manual run.	SELECT Sleep Run Setup Review Single Timed Run 000:00:07 SELECT Hold Continue
3	At the end of the run time the pump stops by itself. The display shows `End Of Timed Run` and the elapsed run time.	End Of Timed Run 001:00:00
4	Press **Select** and **Enter** together to return to the main menu.	SELECT Sleep Run Setup Review

Timed run with delayed start

Step	Action	Display
1	Program a run time and a start delay (see Start delay (p. 15)).	
2	In the main menu, select **Run** and press **Enter**. The display shows `Time To Start` counting down in hours, minutes and seconds.	SELECT Sleep Run Setup Review Time To Start 000:29:53

Step	Action	Display
3	When the countdown reaches `000:00:00`, the pump starts by itself and the run continues as a single timed run, including its end screen.	Single Timed Run 000:00:07 End Of Timed Run 001:00:00

To cancel or keep the program during the countdown, press **Select** and **Enter** together. The display shows `Time To Start Continue Reset`:

- **Reset** + **Enter** cancels the sample program and returns to the main menu;

  Time To Start
Continue Reset

  Time To Start
Continue Reset

  SELECT Sleep
Run Setup Review

- **Continue** + **Enter** returns to the countdown.

  Time To Start
Continue Reset

  Time To Start
000:18:24

Repeat runs

Step	Action	Display
1	Program the run time, the number of runs and the repeat delay, and a start delay if you need one (see Repeat runs (p. 16)).	
2	In the main menu, select **Run** and press **Enter**. With a start delay, the display first counts down `Time To Start`, together with the repeat counter, for example `R01/06`. Options during the countdown are the same as for a delayed start (see Timed run with delayed start (p. 18)).	SELECT Sleep Run Setup Review Time To Start 000:29:54 R01/06 SELECT Hold Continue
3	The first run starts by itself: `Elapsed Run Time` counts up, with the counter `R01/06`.	Elapsed Run Time 000:00:03 R01/06
4	After each run the pump stops, counts down the repeat delay as `Time To Restart`, and steps the counter on — `R02/06`, and so on.	Time To Restart 000:09:56 R02/06
5	After the last run the pump stops and shows `End Of Timed Run` with the total elapsed run time: the sum of all runs. Six runs of one hour each give `006:00:00`.	Elapsed Run Time 005:59:27 R06/06 End Of Timed Run 006:00:00
6	Press **Select** and **Enter** together to return to the main menu.	SELECT Sleep Run Setup Review

After the sample

Put the pump back into sleep mode to save the battery, and fit the rubber dust cap on the inlet hose nipple. The elapsed run time of the sample stays available as `Previous Run` in Review (see Reviewing the program (p. 17)) until the next sample, or until you clear the program.

CHAPTER 5

Maintenance

The battery is a sealed, valve-regulated lead/acid battery and needs no maintenance. How long it lasts depends mostly on two things you control: how it is charged and how deeply it is discharged.

Battery life

Used as its manufacturer intends, the battery lasts about 400 charge/discharge cycles, counted at 50 % depth of discharge. Discharging it further before each charge shortens its life: a battery that is run completely flat every time may last only 200 cycles. Recharge it before it is exhausted.

To replace the battery, follow Fitting the battery (p. 11) (Installation) and charge it fully before use.

NOTICE

Overcharging overheats the battery and drives gas out of its electrolyte; the battery loses capacity and wears out early. Charge only with charger 901-410, which switches to a trickle charge when the battery is full.

Storing the pump

For storage over a long period:

1. Charge the battery fully (see Charging the battery (p. 11)).
2. Put the pump into sleep mode — or, better, open the casing and disconnect the two cables from the battery terminals.

   NOTICE

   A battery left uncharged in storage loses much of its capacity and service life. In extreme cases it no longer accepts a charge at all. Give a stored battery a top-up charge every 6 months, or every 3 months if the pump is stored above 30 °C.

3. Give the battery a top-up charge every 6 months, or every 3 months if the pump is stored above 30 °C. Reconnect the battery cables for each top-up charge.

Cleaning

The casing is rated IP20 and is not water- or splash-proof. Clean the outside so that no water gets into the casing, and keep the dust caps fitted on the inlet hose nipple and the charging/power socket while you do so.

Service work and spare parts

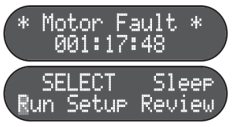
Repairs to the pump head, motor and control board, and the yearly servicing the manufacturer recommends, are service work: contact Analyt-MTC (see Service, warranty and contacts (p. 27)).

Spare parts and their order codes are listed in Spare parts (p. 26) (Ordering information); use only the battery P901402 and the charger 901-410.

CHAPTER 6

Troubleshooting

Messages on the display

Display	Cause	What to do
	The battery charge is too low. A running pump stops and keeps the elapsed run time.	Charge the battery fully with charger 901-410 before you use the pump again (see Flat battery (p. 12)).
	The control board watches the motor speed during a run. It has lost the speed signal — for example because a motor cable has come loose, or because the motor has failed. The elapsed run time is kept.	Press **Select** and **Enter** together to clear the message and return to the main menu. If the fault returns, contact Analyt-MTC.

Problems and remedies

Possible fault	Remedy
Sample medium	1. Check the filter or other medium for heavy loading or damage. 2. Put the problem right. 3. Try restarting the pump.
Sampling train	1. Check the tubing for blockages and kinks. 2. Put the problem right. 3. Try restarting the pump.
Software error: the keypad does not respond	1. Disconnect the battery for one minute and connect it again. The battery cables are inside the casing (see Fitting the battery (p. 11)). 2. Start the programming again.

If none of these remedies helps, contact Analyt-MTC (see Service, warranty and contacts (p. 27)).
Note the message on the display and the elapsed run time before you call.

CHAPTER 7

Specifications

Flow and performance

Flow range	2–20 L/min
Flow setting	With Up/Down keys against an external flowmeter; flow shown as a bar on the display
Noise level	63 dB(A) at 1 m*

* Typical value at a flow of 8 L/min against a back pressure of 24.9 kPa (100 in. H_2O).

Maximum back pressure

Flow rate	kPa	in. H_2O
2 L/min	51.0	205
4 L/min	43.5	175
8 L/min	31.1	125
12 L/min	21.1	85
16 L/min	12.4	50
20 L/min	3.7	15

Power

Internal battery	12 V sealed lead/acid, 7 Ah, Cat. No. P901402
Charging	Charger 901-410, 100–240 V, 50/60 Hz, output 12 V DC, 1 A; detects full charge and switches to trickle charge; only while the pump is not running
Charging time	Approx. 10 hours for a fully discharged P901402
External power	Mains adapter 901-411, 100–240 V, 50/60 Hz, output 12 V DC, 2 A; or external 12 V lead/acid battery, e.g. P901107 (12 Ah), with cable 901-212
Run time	See Typical run times (p. 23) below
Battery status	Shown in five steps: 100, 75, 50, 25 % and flat; automatic shutdown on a flat battery, with the elapsed run time kept

Display and programming

Display	Two-line backlit liquid crystal display (LCD); four-key keypad
Timer	Elapsed run time in hours, minutes and seconds
Programmable run time	In hours and minutes
Programmable start delay	In hours and minutes, with countdown on the display
Repeat runs	Number of runs and interval between them programmable; current run shown on the display
Fault indication	Flat battery; motor fault

Operating conditions

Temperature	Operating −5 to +50 °C · charging −5 to +45 °C · storage −5 to +50 °C
Relative humidity	0–95 % RH
Casing protection	IP20 (not water- or splash-proof)

Mechanical

	901-4011	901-4012 (twin port)
Weight without battery	2.06 kg	2.09 kg
Weight with battery P901402	4.26 kg	4.29 kg
Dimensions (W × H × D)	163 × 112 × 203 mm	
Connections	Inlet hose nipple; charging/power socket with screw-in cap	As 901-4011, plus outlet hose nipple

Typical run times

Run times on one charge of a new, fully charged P901402 battery, measured with clean 25 mm filters under clean factory conditions. They do not allow for filter loading, and filter back pressure and pump performance vary from case to case. The flow rates show the pump's performance — they are not recommendations for sampling methods.

Filter, 25 mm	4 L/min	8 L/min	12 L/min	16 L/min
Mixed cellulose ester (MCE), 0.8 µm	30 h	14 h	6 h	—
MCE, 1.2 µm	35 h	16 h	8 h	—
Glass fibre (GFA)	—	22 h	13 h	7 h

CHAPTER 8

Ordering information

Order from Analyt-MTC with the order codes. The item numbers in Figures 3 and 4 match the first column of the spare-parts table. For a part that is not listed, and for sampling media, ask Analyt-MTC. Use only the battery P901402 and the charger 901-410 listed here (see Safety (p. 6)).

Pumps and kits

Order code	Description
901-4011	Flite4 high flow sample pump, 2–20 L/min, without battery
901-4011K	Flite4 sample pump kit: pump with 7 Ah battery, single charger and 1 m of Tygon tubing
901-4012	Flite4 twin-port high flow sample pump, 2–20 L/min, without battery; as 901-4011 with an additional outlet hose nipple

The pump on its own needs the internal battery P901402 and the charger 901-410, ordered separately.

Components

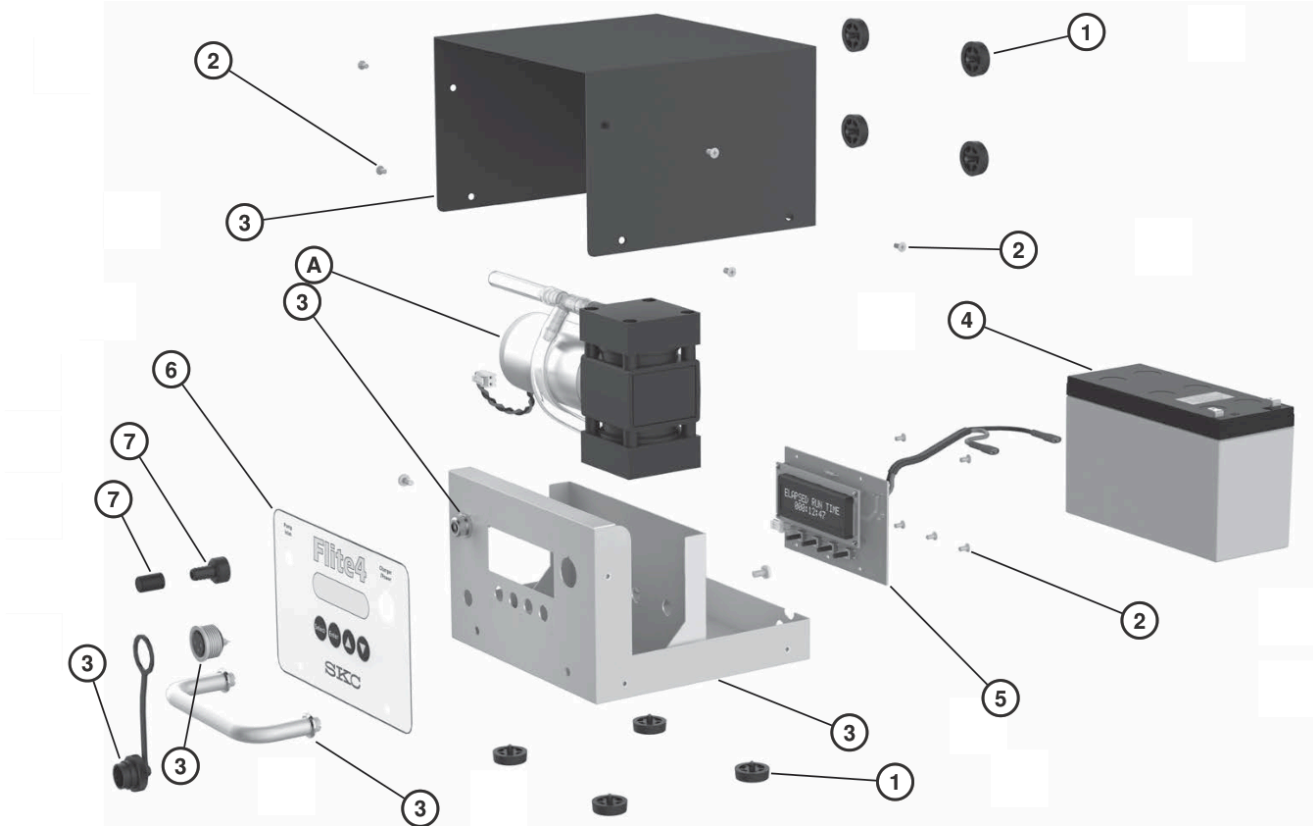


Figure 3. Pump components.
1 Casing foot · **2** Casing screw · **3** Casing base — the figure gives the same item number to the casing lid, the carry handle, the bulkhead connector with back nut, the power/charging socket and its cap · **4** Battery · **5** Main control printed circuit board (PCB) assembly · **6** Fascia label · **7** Inlet hose nipple and sealing cap · **A** Pump head and motor assembly (Figure 4)

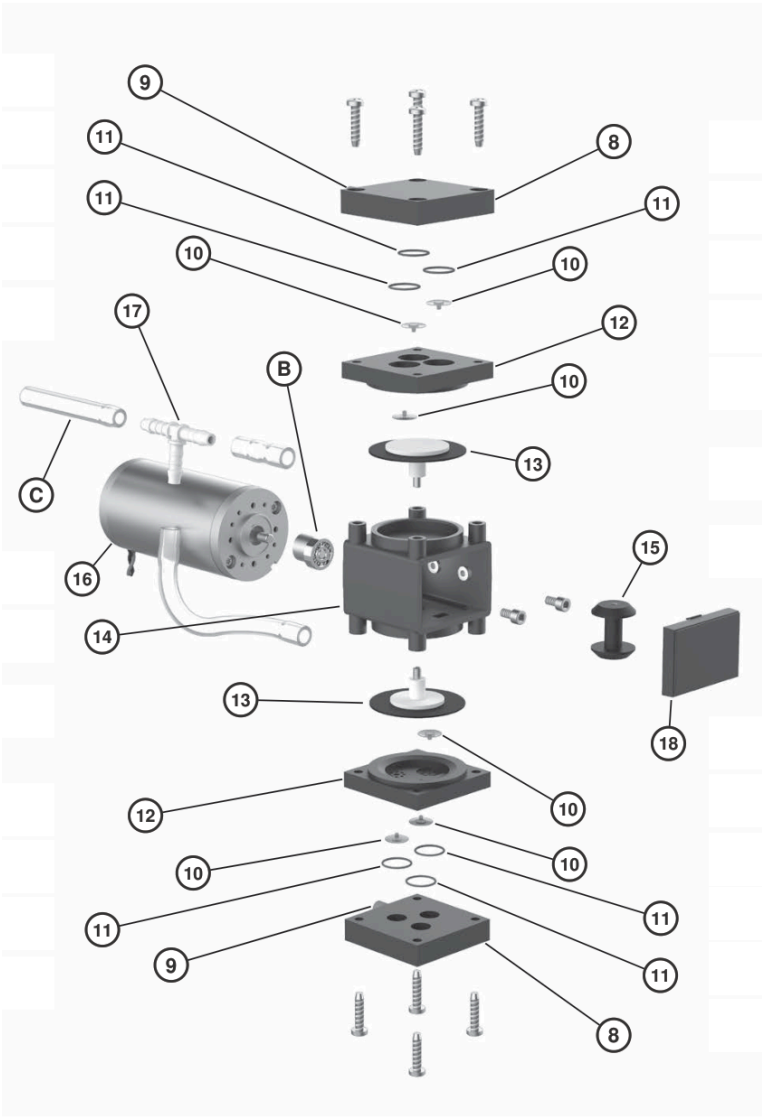


Figure 4. Pump head and motor.
8 Pump head inlet/outlet · **9** Pump head inlet/outlet tube · **10** Valve diaphragm · **11** O-ring · **12** Valve plate · **13** Clamp and diaphragm assembly · **14** Pump housing · **15** Cam follower · **16** Motor · **17** Tubing tee piece · **18** End plate · **B** Cam and bearing assembly · **C** Tubing (B and C are not listed as spare parts)

Spare parts

Item	Order code	Description
1	P901111	Casing feet, pack of 4
2	P901110	Casing screws, pack of 10
3	P901404	Casing base
4	P901402	Battery, 12 V, 7 Ah, lead/acid
5	P901403	Main control PCB assembly
6	P901405	Fascia label
7	P901108	Inlet hose nipple
8	P901406	Pump head inlet/outlet
9	P901208	Pump head inlet/outlet tube, pack of 2
10	P901407	Valve diaphragm, pack of 6
11	P901408	O-ring, pack of 6
12	P901409	Valve plate
13	P901410	Clamp and diaphragm assembly
14	P901122	Pump housing
15	P901411	Cam follower
16	P901412	Motor
17	P901118	Tubing tee piece
18	P901413	End plate

Accessories

Description	Order code
POWER	
Battery charger, 100–240 V, 50/60 Hz, output 12 V DC, 1 A; with UK, EU, US and AUS mains plugs	901-410
Mains adapter, 100–240 V, 50/60 Hz, output 12 V DC, 2 A; with UK, EU, US and AUS mains plugs	901-411
High-capacity lead/acid battery, 12 V, 12 Ah, external; needs cable 901-212	P901107
External battery hookup cable, with crocodile clips	901-212
SAMPLING	
Rigid aluminium sampling mast, two-piece, 1 m high	901-213
Rigid aluminium sampling mast, four-piece, 1 m high	901-214
Cowled “asbestos” sampling head, aluminium	225-54A
Gridded MCE filters, 25 mm, 0.8 µm pore size, pack of 100	225-1913
FLOW MEASUREMENT	
chek-mate flowmeter, 5–30 L/min, accuracy ±1 % of reading	375-50300
Pulsation dampener, for chek-mate 375-50300	375-150
Rotameter, 1.0–13.0 L/min, accuracy 2.5 % to VDI/VDE 3513-2:2008	393-1130
Rotameter, 2.0–26.0 L/min, accuracy 2.5 % to VDI/VDE 3513-2:2008	393-2260
Flow calibration adapter, for cowled asbestos heads	391-05

Setting up the sampling masts is described in the separate instructions for the sampling masts; ask Analyt-MTC for them.

CHAPTER 9

Service, warranty and contacts

Analyt-MTC is your contact for everything concerning the Flite4: technical questions, spare parts and accessories, servicing, repairs and warranty claims. Work beyond fitting and connecting the battery is service work; contact Analyt-MTC.

Contact

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Before you contact Analyt-MTC

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

- the model (901-4011 or 901-4012) and the serial number of the pump;
- the message on the display and the elapsed run time;
- the flow rate, the sample program and the power supply you used.

Returning a pump

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

Warranty

The pump is covered by the warranty terms of Analyt-MTC. Make warranty claims to Analyt-MTC. Damage caused by not following the rules in Safety (p. 6) can affect a claim; Analyt-MTC's terms decide.

Regular servicing

The manufacturer recommends servicing the pump once a year: the first service is due one year after purchase, and the following ones every year on that date. How often your pump actually needs servicing is for you to decide on the basis of your own risk assessment. Record the services in the table below.

Model	
Serial number	
Date of purchase	

Service	Date	Service	Date	Service	Date
1		5		9	
2		6		10	
3		7		11	
4		8		12	

Disposal

The pump carries the crossed-out wheeled-bin symbol: at the end of its life it is waste electrical and electronic equipment (WEEE) and must not go into household waste. Take the battery out first; the pump and the battery are disposed of separately.

The lead/acid battery must be collected and treated separately from other waste, so that the lead it contains does not reach the environment through landfill. Dispose of the pump and the battery according to the national regulations on waste electrical equipment and waste batteries. For details of how to comply, ask Analyt-MTC.



Figure 5. WEEE marking on the pump.

ANALYT-MTC Messtechnik GmbH

Sales, service and calibration

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