ANALYT MESSTECHNIK



OPERATING MANUAL

SKC DataTrac Software for the Pocket Pump

Installing the PC software, connecting the pump, calibrating and controlling it in real time, programming up to 14 timed runs, and turning the pump history into worker exposure reports.

AMTC-MN-0023

Rev. 2 · October 2026

About this manual

SKC DataTrac for Pocket Pump is Windows software that runs an SKC Pocket Pump from a PC. With the pump on the DataTrac adapter cable you can watch it work in real time, calibrate its flow against a primary standard, program up to 14 timed sampling runs, and read back the pump's history to file, print or merge into a worker exposure report.

This manual follows that order. Product description (p. 8) lists what DataTrac does and the files it writes; Installation (p. 10) gets the software and the pump talking. The Operation chapter after it covers each window in turn, with a worked example of a one-week program. Advanced topics (p. 25) explains Sleep and Hibernate, the settings file and the history file format for users who process the data further.

The manual applies to DataTrac for Pocket Pump only. The Pocket Pump TOUCH is programmed with a different program, DataTrac Pro (Cat. No. 877-94), which has its own manual. For questions, contact Analyt-MTC (see Service, warranty and contacts (p. 30)).

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: **ToPump**.
- A menu path such as **File › Save** means that you open each entry in turn.

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.

Tip
A shortcut or recommendation; never a hazard.

Window names are also written in bold. The software labels its windows "SKC …"; this manual shortens them, for example **Pump Scheduler** for the SKC Pump Scheduler window.

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 install DataTrac and connect a Pocket Pump. Its safety messages concern sampling runs that start at the wrong time, flow and exposure values that come out wrong, and the settings file; the hazards of the pump itself are covered by its own operating manual.

Intended use

DataTrac for Pocket Pump is PC software for the SKC Pocket Pump. Use it with the DataTrac USB adapter cable to monitor and calibrate the pump, to send up to 14 timed sampling runs to it, and to read back, save and report its history. It does not work with the Pocket Pump TOUCH, which is run with DataTrac Pro.

For the pump itself — its battery, charging, where it may be used and how it is fitted to a sampling train — follow the operating manual supplied with the Pocket Pump. Connect the pump to the PC only where that manual allows it.

Programmed runs

A programmed pump runs alone, so a wrong clock, an option set too late or an interrupted Sleep shows up only in the results. Check these points before you send a program.

NOTICE

The pump takes its clock from the PC. If the PC's date or time is wrong, programmed runs start and stop at the wrong moment. Check the date and time of the PC, and correct them if necessary.

NOTICE

The run-time options travel with the program, and old records stay in the history until it is cleared. Options set later do not reach the pump, and the new runs are mixed with the old records. Before you click ToPump, set the run-time options and clear the old history with Tools › Clear History.

NOTICE

Each time the Sleep mode of a programmed pump is interrupted, every later start time can shift by up to one minute. Leave a programmed pump alone once it has gone to sleep, until its program has run.

Calibration and exposure values

NOTICE

While you calibrate, the correction changes the flow that the calibrator measures, but the flow shown on the pump display stays the same. A flow set by the pump display is therefore wrong. Judge the flow by the calibrator only.

Note

Resetting the temperatures while the pump is not in Hold disturbs the time-weighted average (TWA). The TWA can then be erratic for the first minute. Put the pump in Hold before you click Reset Temps or Reset Volume Temp and Time.

The settings file

NOTICE

Editing the settings file is for users who know Windows and its configuration files well. A wrong entry changes how DataTrac programs every pump. Keep a copy of the file before you change it.

CHAPTER 2

Product description

System requirements and delivery

Operating system	Microsoft Windows XP or later, including Windows 7 (64-bit)
Disk space	At least 20 MB free on the hard drive
Drives and ports	CD-ROM drive; a free USB port for the DataTrac adapter cable
Input	Mouse
Delivered	DataTrac software and instructions on CD-ROM; DataTrac USB adapter cable

The Pump Manager window

The Pump Manager is the first window DataTrac opens. Every other window is opened from its menus, and closing a window returns you here.

Menu	Command	What it does
File	**Exit**	Closes DataTrac.
View	**Pump Scheduler**	Opens the programming window (Programming the pump (p. 17)).
	Sample Sheet	Opens the Sample Sheet Setup window (Sample sheets and reports (p. 23)).
	Report	Opens a worker exposure profile saved on the PC (.rpt).
	Pump History	Opens the history of the connected pump (Pump history (p. 21)).
	Archive History	Opens a history file saved on the PC (.hst).
	Real Time Monitor	Opens the live view and pump controls (Operation (p. 14)).
Tools	**Clear History**	Deletes the history stored in the pump.
	Clear Schedule	Deletes the program stored in the pump.
	Intermittent Sampling	Runs the connected pump on and off at chosen intervals for a chosen total run time.
About		Shows the DataTrac version, the pump firmware revision and the pump serial number.

Note
Intermittent Sampling works only while the pump stays connected to the PC.

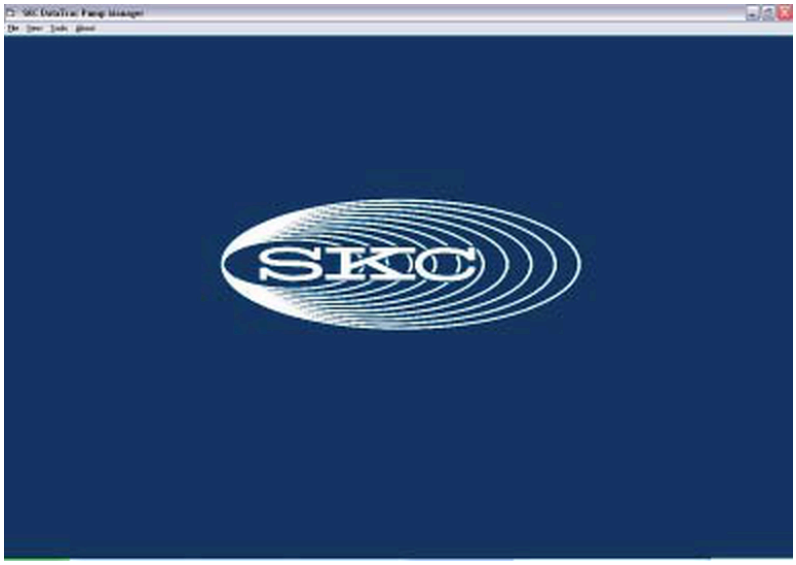


Figure 1. The **SKC DataTrac Pump Manager** window, the first window DataTrac opens.

Files DataTrac writes

Extension	Contents	Written from
.pgm	Pump program	Pump Scheduler, **File › Save**
.hst	Pump history	Pump History, **File › Save**
.stp	Sample sheet setup (all fields)	Sample Sheet Setup, **File › Save Setup**
.tpl	Sample sheet template (ticked fields only)	Sample Sheet Setup, **File › Save Template**
.rpt	Worker exposure profile (sample sheet + history)	Sample Sheet Setup, **Options › Merge Pump** or **Merge File**

CHAPTER 3

Installation

Installing DataTrac

DataTrac installs from its CD-ROM with a standard InstallShield wizard. If an older version of DataTrac is already on the PC, remove it first (see Updating an existing installation (p. 10)).

1. Close all other programs.
2. Insert the DataTrac CD. The installer starts by itself; if it does not, open **My Computer** from the Start menu or the desktop and double-click the CD drive.
3. In the Welcome window, click **Next**.
4. Accept the licence agreement and click **Next**. Without accepting, the installation stops.
5. Enter your user name and organisation, choose whether DataTrac is installed for all users of the PC or only for you, and click **Next**.
6. Click **Next** to install into the folder shown.
7. Wait while the files are copied — this can take several minutes. **Do not press any keys during the installation.**
8. When the wizard reports that it has finished, click **Finish**.

A successful installation places a **Pocket Pump** shortcut (PocketPump.exe) on the desktop. If the wizard reports an error instead, run the installation again.



Figure 2. The **Pocket Pump** shortcut that the installation puts on the desktop.

Updating an existing installation

1. Close all other programs, insert the CD and click **Next** in the Welcome window, as for a new installation.
2. The Program Maintenance window offers three choices: **Modify** changes the installation settings (use it to change them later), **Repair** updates the installed software, **Remove** deletes it. Choose **Remove** — the recommended way to update — and click **Next**.
3. Confirm with **Remove**. When the wizard reports that the old version is removed, click **Finish**.
4. Install the new version as described in Installing DataTrac (p. 10).

Connecting the pump

The DataTrac adapter cable runs from the interface port of the Pocket Pump to a USB port on the PC.

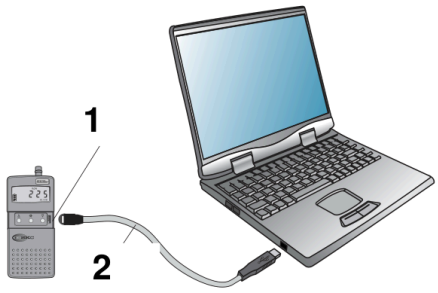


Figure 3. Pump connected to the PC. **1** Pump interface port · **2** DataTrac adapter cable

> **Note**
> **Working without a pump.** You can build and save a program with no pump connected, but monitoring, calibration, sending programs and reading history all need a pump that is connected and awake.

First connection

1. Connect the pump to the PC with the adapter cable. If Windows opens the Found New Hardware wizard:
   - check that it wants to install software for "USB Serial Port". If it names anything else, cancel the wizard and plug the cable into a different USB port;
   - choose to install the software automatically and click **Next**. Do not press any keys while the driver installs, which can take several minutes;
   - click **Finish** when the wizard reports success.
2. Wake the pump: press any button on its keypad so that the display lights.
3. Start DataTrac with the **Pocket Pump** shortcut on the desktop. The Pocket Pump Connection window opens.
4. Click **Connect to Pump**. A handshake symbol confirms the connection. If an error box appears instead, see If the connection fails (p. 12).

   NOTICE

   The pump takes its clock from the PC. If the PC's date or time is wrong, programmed runs start and stop at the wrong moment. Check the date and time of the PC, and correct them if necessary.

5. Check the date and time of the PC and correct them if necessary.
6. DataTrac opens the Pump Manager window (p. 8).

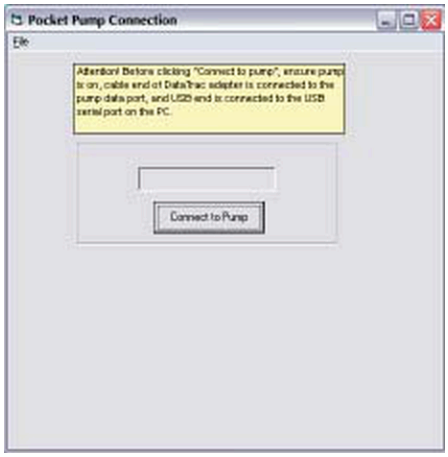


Figure 4. The **Pocket Pump Connection** window.



Figure 5. Successful connection: the shaking-hands icon.

Later connections

Once the driver is installed, connecting takes four steps: plug in the adapter cable, wake the pump with any keypad button, start DataTrac and click **Connect to Pump**. After the handshake symbol, check the PC's date and time as in step 5 above.

If the connection fails

The error box offers three buttons: **Abort** closes DataTrac, **Retry** tries the connection again, and **Ignore** opens the Pump Manager without a pump, with only the functions that do not need one. To get a working connection:

1. Check that the pump display is lit; if not, press a keypad button.
2. Check both ends of the adapter cable and click **Retry**.
3. If the error box appears again, the adapter cable has probably been given a COM port number above 9. Change it as described below.



Figure 6. The connection error box.

Changing the COM port number

1. With the adapter cable plugged in, right-click **My Computer** in the Start menu, choose **Manage**, open **Device Manager** and expand **Ports (COM & LPT)**.
2. Double-click **USB Serial Port** (listed as COM10 or similar), open the **Port Settings** tab and click **Advanced**.
3. In the **COM Port Number** list, choose a free port from COM5 to COM9 and click **OK**.

4. Connect again as described in First connection (p. 11), steps 2 to 4.

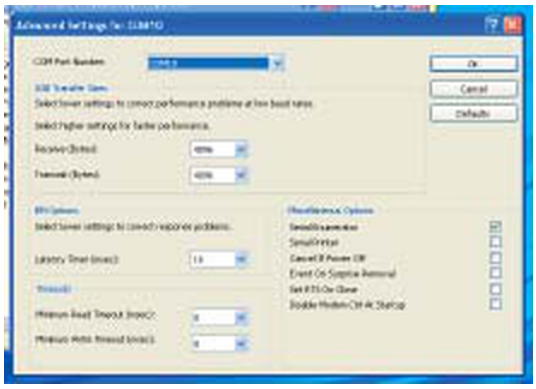


Figure 7. The **COM Port Number** list in the Windows port settings.

CHAPTER 4

Operation

DataTrac is operated through the windows that the Pump Manager opens: the Real Time Monitor watches, runs and calibrates the connected pump; the Pump Scheduler programs its runs; the Pump History and the sample sheet keep the records on the PC. The last part explains Sleep and Hibernate, the settings file and the history file format.

The Real Time Monitor controls the connected pump directly: it shows what the pump is doing, starts and holds it, sets flow or pressure and display units, and calibrates the flow. Open it with **View › Real Time Monitor** in the Pump Manager.

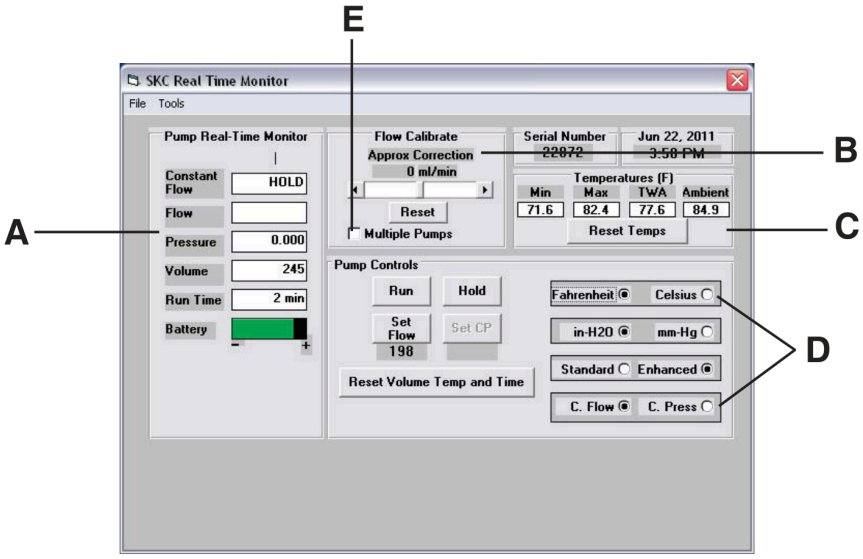


Figure 8. Real Time Monitor window. **A** Live readout · **B** Flow Calibrate · **C** Temperatures · **D** Pump controls · **E** Multiple Pumps checkbox. The window also shows the pump serial number, date and time.

Its menus duplicate two tools of the Pump Manager — **Tools › Clear Schedule** and **Tools › Clear History** — and **File › Exit** returns to the Pump Manager.

Live readout

Field	Shows
Mode	Constant Flow or Constant Pressure, with the state: **RUN** (running), **HOLD** (stopped) or **FAULT** (flow fault)
Flow	Current flow rate, mL/min
Pressure	Back pressure, in in H2O or mm Hg
Volume	Air volume pumped, mL
Run Time	Total run time of the pump
Battery	A light bar running from empty (–, left) to full (+, right): the longer the bar, the fuller the battery. A solid black bar means the battery is flat.

Note
The fields refresh every 5 seconds. After you change the pump's operation, the old values can remain for up to 5 seconds.

Calibrating the flow

Flow Calibrate trims the pump so that the flow measured by a primary standard calibrator matches the flow set on the pump. The **Approx Correction** value is the difference between the two. Once the pump is calibrated, every volume it displays is correct for that flow.

The correction range is ±20 mL/min. Drag the slider, or click its arrow buttons: right raises the pump flow (more correction), left lowers it. **Reset** sets the correction back to 0.0 mL/min.

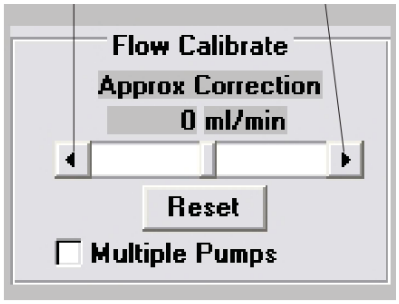


Figure 9. Flow Calibrate panel. Right arrow: increase flow; left arrow: decrease flow.

1. Set the pump to the flow rate you need.

   NOTICE

   While you calibrate, the correction changes the flow that the calibrator measures, but the flow shown on the pump display stays the same. A flow set by the pump display is therefore wrong. Judge the flow by the calibrator only.

2. Connect the pump inlet to a primary standard calibrator and read the flow on the calibrator.
3. If the calibrator reads higher than the set flow, move the slider left; if it reads lower, move it right.
4. Read the calibrator again. Repeat steps 3 and 4 until the reading is within the tolerance your method requires.

Example: the pump is set to 150 mL/min and the calibrator reads 157 mL/min. Move the slider left to a correction of −7 mL/min, then read the calibrator again.

- Calibrate before every sample run.
- DataTrac always shows the last correction the connected pump was set to.
- Changing the flow setting on the pump clears the correction to 0.0.

Setting up several pumps

Note
Switch Comm Checking off before you work through several pumps (see Comm Checking (p. 20)), otherwise DataTrac stops with an error each time you unplug a pump.

1. Tick **Multiple Pumps** in the Flow Calibrate area. A separate window opens.
2. Calibrate the flow, reset volume, temperature and time, or change the display units for the first pump.
3. Unplug the adapter cable from the pump and plug it into the interface port of the next Pocket Pump; repeat step 2.
4. When all pumps are done, clear the **Multiple Pumps** tick to return to the Real Time Monitor.

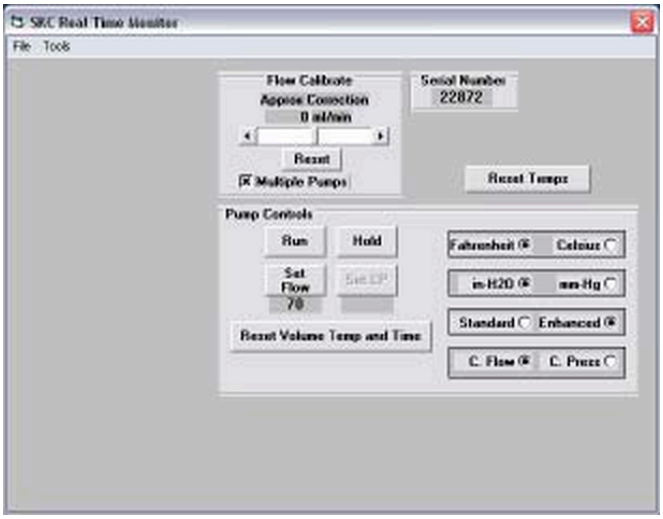


Figure 10. The window that opens when **Multiple Pumps** is ticked.

Temperatures

The Temperatures area shows the temperature of the air entering the pump: **Min** and **Max** during the program run, **TWA** (time-weighted average of all readings) and **Ambient** (current). Min, Max and TWA are calculated over the pump's total run time and stay in memory until reset, so later runs are included in them. **Reset Temps** sets Min and Max to the ambient temperature and restarts the TWA.

> **Note**
> Resetting the temperatures while the pump is not in Hold disturbs the TWA. The TWA can then be erratic for the first minute. Put the pump in Hold before you click Reset Temps or Reset Volume Temp and Time.

Pump controls

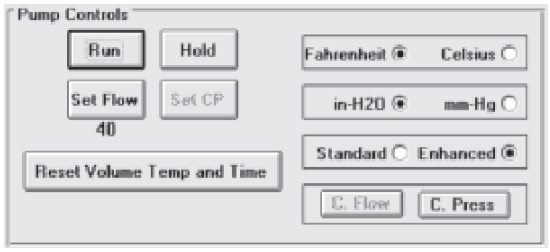


Figure 11. Pump controls.

Control	Effect
Run / **Hold**	Starts the pump / puts it in Hold.
Set Flow	Opens the Set Flow window (see Setting flow or pressure (p. 17)). Constant flow mode only; the current flow is shown beneath the button.
Set CP	Opens the Constant Pressure window. Constant pressure mode only; the current back pressure is shown beneath the button.
Reset Volume Temp and Time	Clears the accumulated volume, the temperature data and the run time.
Fahrenheit / **Celsius**	Temperature unit.
in H2O / **mm Hg**	Pressure unit.
Standard / **Enhanced**	Pump display: flow, time and volume (Standard), or flow, time, volume, temperature and pressure (Enhanced).
C. Flow / **C. Press**	Constant flow or constant pressure mode. Switching mode resets the live readout.

Programming the pump

In the Pump Scheduler you build a program of up to 14 runs, each with its own mode, rate, start and stop, and send it to the pump. The pump then runs the program on its own, away from the PC. Open the window with **View › Pump Scheduler** in the Pump Manager.

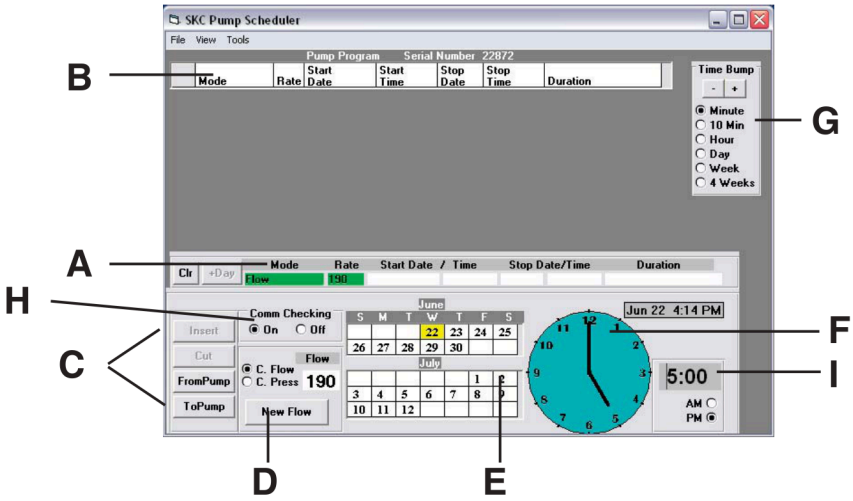


Figure 12. Pump Scheduler window. **A** Program Edit Bar · **B** Pump Program Scheduler (list of runs) · **C** Programming buttons · **D** Flow and pressure buttons · **E** Calendar · **F** Clock · **G** Time Bump · **H** Comm Checking · **I** Digital time display

How a program is built

You assemble one run at a time in the **Program Edit Bar** (A): pick a value with the buttons, calendar or clock, then click the cell it belongs in. When the run is complete, **Insert** copies it into the **Pump Program Scheduler** list (B). The list holds up to 14 runs; **ToPump** writes the whole list into the pump's memory.

Cell	Content
Mode	Flow (constant flow) or Pressure (constant pressure)
Rate	Flow rate in mL/min, or back pressure
Start Date / Time	When the run starts
Stop Date / Time	When the run stops
Duration	Total run time, calculated by DataTrac

Menu	Command	What it does
File	**Open**	Opens a program saved on the PC.
	Save	Saves the list as a program file (.pgm).
	Print	Prints the list shown on screen.
	Exit	Returns to the Pump Manager.
View	**Pump Settings**	Opens the run-time options (Run-time options (p. 19)).
	Clock Resolution	Sets the clock steps (Dates and times (p. 18)).
Tools	**Clear History**	Deletes the history stored in the pump.
	Clear Schedule	Deletes the program on screen and in the pump.

Setting flow or pressure

Click **C. Flow** or **C. Press** (D) to choose the mode; DataTrac enters Flow or Pressure in the Mode cell. The button below then reads **New Flow** or **New Pressure**:

- **New Flow** opens the Set Flow window. Click one of the flow buttons, or step the value with the up and down buttons, then click **OK** and click the Rate cell.
- **New Pressure** opens the Constant Pressure window. Click one of the pressure buttons, then **OK**, and click the Rate cell.

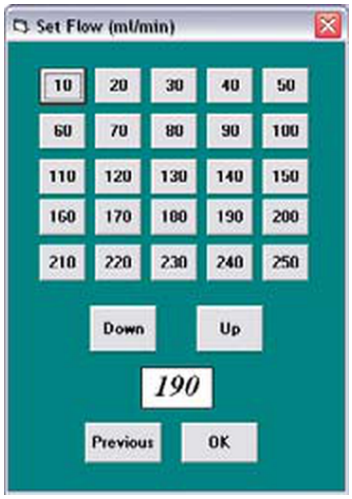


Figure 13. The **Set Flow** window.

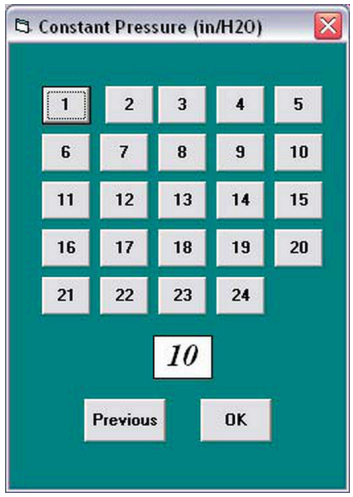


Figure 14. The **Set Constant Pressure** window.

Dates and times

- **Calendar** (E) — covers the 21 days ahead in which runs can be programmed. Click a date, then click the Start Date or Stop Date cell.
- **Clock** (F) — click the rim of the clock face at the time you want, click **AM** or **PM**, then click the Start Time or Stop Time cell. The rim snaps to steps of 10, 15 or 30 minutes or 1 hour, chosen with **View › Clock Resolution**. For 4:15 PM, for example, choose 15 minutes, click the rim at 4:15 and click **PM**.
- **Digital time display** (I) — for times between the clock steps. Double-click the display, type the time including the colon (drag across digits to change only some of them), click **AM** or **PM**, then click the time cell.

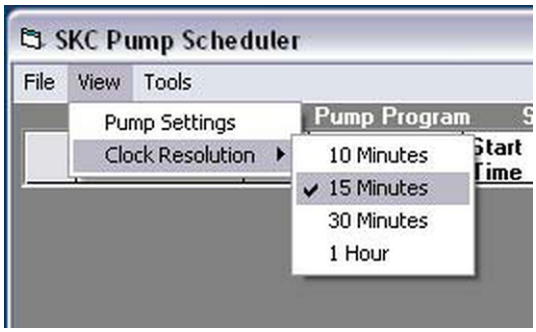


Figure 15. View › Clock Resolution in the Pump Scheduler.

Building the list

Button	Effect
Clr	Empties the Program Edit Bar.
+Day	Moves the dates in the Program Edit Bar on by one day.
Insert	Adds the run in the Program Edit Bar to the list (up to 14 runs).
Cut	Removes the highlighted run from the list and places it in the Program Edit Bar.
FromPump	Reads the program stored in the pump into the list.
ToPump	Writes the list to the pump.

To change a run in the list, double-click it (or its number at the left): it moves into the Program Edit Bar, replacing whatever was there. Edit it and click **Insert** again.

Time Bump (G) shifts every start and stop time in the list at once. Choose the step — Minute, 10 Min, Hour, Day, Week or 4 Weeks — then click **+** to move all runs later or **−** to move them earlier.



	Mode	Rate	Start Date	Start Time	Stop Date	Stop Time	Duration
1	Flow	100	Jul 4 2011	8:00 AM	Jul 4	4:00 PM	8 Hr

Figure 16. The **Pump Program Scheduler** list holding one pump program.

Run-time options

View › Pump Settings opens the Pump Program Settings window. Its options are sent to the pump together with the program when you click **ToPump**, and only then take effect. Click **OK** to return to the Pump Scheduler.

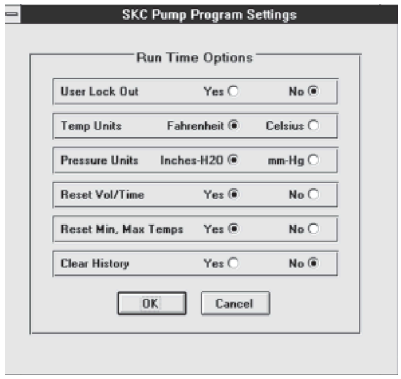


Figure 17. Pump Program Settings, default options.

Option	Default	Effect
User Lock Out	No	Yes locks the pump's operating parameters — even the keypad security code cannot change them. The operator can still scroll through the displayed data.
Temp Units	Fahrenheit	Fahrenheit or Celsius.
Pressure Units	Inches H2O	Inches H2O or mm Hg.
Reset Vol/Time	Yes	Sets the pumped volume and the run time to zero.
Reset Min, Max Temps	Yes	Sets the minimum and maximum temperatures to zero.
Clear History	No	Deletes the pump history. Clearing it before each new program is good practice.

Sending the program to the pump

NOTICE

The run-time options travel with the program, and old records stay in the history until it is cleared. Options set later do not reach the pump, and the new runs are mixed with the old records. Before you click ToPump, set the run-time options and clear the old history with Tools › Clear History.

1. Click **ToPump**. DataTrac asks you to confirm writing the program to the pump with the serial number shown.
2. Click **OK**. "Program Loaded" confirms the transfer.

The pump display now shows the **PROG** symbol until all runs are complete. With User Lock Out set, PROG stays on after the last run.

NOTICE

Each time the Sleep mode of a programmed pump is interrupted, every later start time can shift by up to one minute. Leave a programmed pump alone once it has gone to sleep, until its program has run.

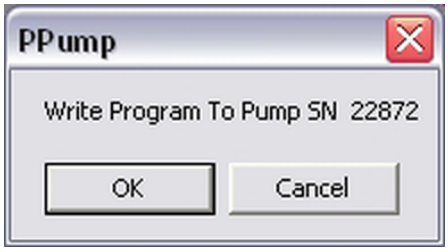


Figure 18. The dialog box after **ToPump**.

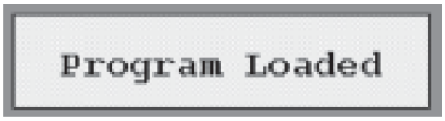


Figure 19. The **Program Loaded** dialog box.

Comm Checking

Comm Checking (H) watches the cable connection to the pump. It is on by default: if the cable comes loose, an error message appears; reconnect the pump and click **Retry**.

Note
When you program more than one pump, click **Off** first. Otherwise the error message appears every time you unplug a pump. With Comm Checking off, the pump goes to sleep 5 minutes after its last exchange with the PC.



Figure 20. The error message when Comm Checking finds no connection.

Example: one working week

The task: sample at a constant flow of 100 mL/min from 8:00 AM to 4:00 PM every day, Monday to Friday. Each day is one run, so the program has five runs. All steps are in the Pump Scheduler.

1. Start with a clean pump

If required, choose **Tools › Clear History** to delete the history on screen and in the pump, and **Tools › Clear Schedule** to delete the program on screen and in the pump.

2. Build Monday's run

1. **Flow.** Click **C. Flow**, then **New Flow**. In the Set Flow window click **100**, then **OK**. Click the Rate cell: the Program Edit Bar shows Flow and 100.
2. **Date.** Click a Monday in the calendar, then click the Start Date cell and the Stop Date cell. Both show that Monday.

3. **Start.** Click the clock at 8 — the digital display shows 8:00 — click **AM** and click the Start Time cell: 8:00 AM.
4. **Stop.** Click the clock at 4, click **PM** and click the Stop Time cell: 4:00 PM. The Duration cell shows 8 Hr.
5. **Insert.** Click **Insert**. Monday's run appears in the list and stays in the Program Edit Bar.

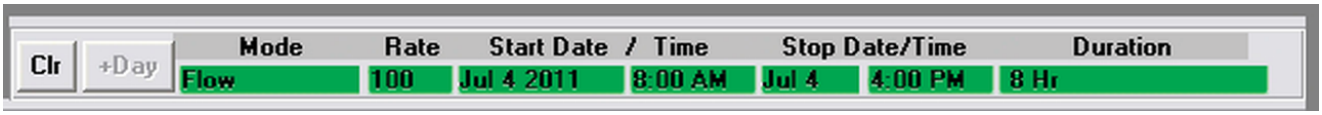


Figure 21. The completed program in the **Program Edit Bar**.

3. Add Tuesday to Friday

1. Click **+Day**. The start and stop dates in the Program Edit Bar move on by one day.
2. Click **Insert**.
3. Repeat steps 1 and 2 until the list holds all five days.

Pump Program Serial Number 22872

	Mode	Rate	Start Date	Start Time	Stop Date	Stop Time	Duration
1	Flow	100	Jul 4 2011	8:00 AM	Jul 4	4:00 PM	8 Hr
2	Flow	100	Jul 5 2011	8:00 AM	Jul 5	4:00 PM	8 Hr
3	Flow	100	Jul 6 2011	8:00 AM	Jul 6	4:00 PM	8 Hr
4	Flow	100	Jul 7 2011	8:00 AM	Jul 7	4:00 PM	8 Hr
5	Flow	100	Jul 8 2011	8:00 AM	Jul 8	4:00 PM	8 Hr

Figure 22. The pump program for the working week, one line per day.

4. Send, save and print

1. Choose **View › Pump Settings** and set the run-time options (see Run-time options (p. 19)).
2. Click **ToPump**. DataTrac writes all five runs to the pump.
3. Choose **File › Save** to keep the program as a .pgm file for later use or changes.
4. Choose **File › Print** for a paper copy of the list.

> **Tip**
> Load a program as close to its first start as you can. A programmed pump sleeps until its first run, and the battery runs down while it waits (see Sleep, Hibernate and battery life (p. 25)).

Pump history

The pump records every operation — runs, holds, faults — in its history, up to 50 entries. The history stays in the pump and on screen until you clear it. Open it with **View › Pump History** in the Pump Manager.

The Pump History window

Menu	Command	What it does
File	**Save**	Saves the history as a history file (.hst) on the PC.
	Print	Prints the history shown.
	Exit	Returns to the Pump Manager.

Menu	Command	What it does
Tools	**Clear History**	Deletes the history on screen and in the pump.

Save the history to the PC as soon as possible after sampling. Timing information can be lost while a pump hibernates (see History and Hibernate (p. 25)).

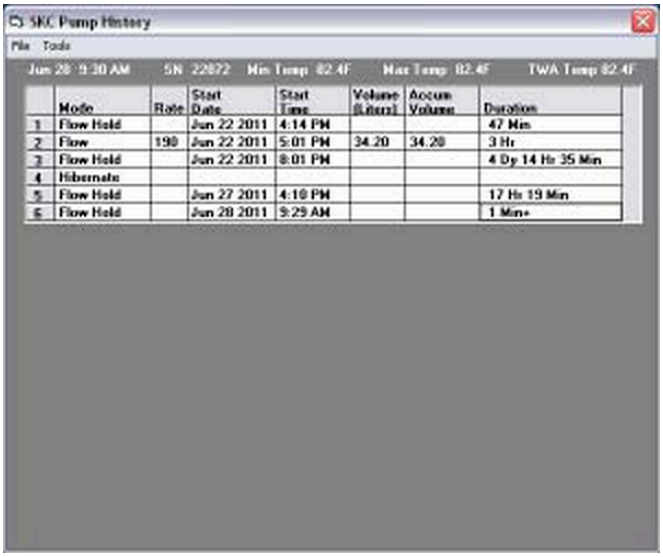


Figure 23. The **SKC Pump History** window.

Reading the history

Each line of the history is one period of pump operation. The first column gives the state:

State	Meaning
Flow	Running at constant flow
CP	Running at constant back pressure
Hold	Stopped (Hold)
Flow Fault	Flow fault during constant flow
CP Flow Fault	Flow fault during constant pressure
Fault	Fault of unknown cause
Low Battery	Battery exhausted
Hibernate	Low-power state, entered after 24 hours in Hold (see Sleep, Hibernate and battery life (p. 25))

The other columns are **Rate** (flow in mL/min, or back pressure in in H2O or mm Hg), **Start Date** and **Start Time**, `Volume (Liters)` — flow multiplied by duration —, **Accum Volume** — the sum of all volumes so far, in litres — and **Duration**, the run time of the period.

> **Note**
> **After a flow fault the pump display can show more volume than the history.** The pump goes to Hold and tries to restart every 5 minutes; if the fault has not cleared within 15 seconds, it returns to Hold. The air pumped during these attempts appears on the pump display, which updates every second, but not in the history.

Opening a saved history

View › Archive History in the Pump Manager opens the Pump Archive History window, which shows a history file (.hst) saved on the PC. The window stays empty until you open a file with **File › Open**. **File › Print** prints the file shown, and **File › Exit** returns to the Pump Manager.

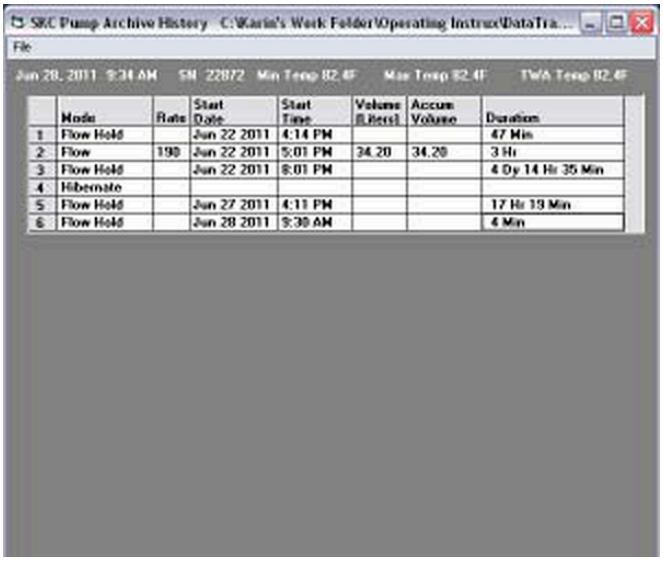


Figure 24. The **SKC Pump Archive History** window.

SKC Pump History
SN 22872
Tuesday, June 28, 2011
10:39 AM
Min Temp 82.4F
Max Temp 82.4F
TWA Temp 82.4F
No Flow Correction

Mode	Value	Start	Volume Liters	Accum Volume	Duration
Flow	Hold	Wed Jun 22 2011 4:14 PM			47 Min
Flow	190	Wed Jun 22 2011 5:01 PM	34.20	34.20	3 Hr
Flow	Hold	Wed Jun 22 2011 8:01 PM			4 Dy 14 Hr 35 Min
Hibernate					
Flow	Hold	Mon Jun 27 2011 4:11 PM			17 Hr 19 Min
Flow	Hold	Tue Jun 28 2011 9:30 AM			1 Hr 9 Min+

Figure 25. Example of a Pocket Pump history file as printed.

Sample sheets and reports

A sample sheet records who was sampled, where, with which medium and method, and what the laboratory found. Merged with the pump history it becomes a worker exposure profile — one printable record of the sample. Open the Sample Sheet Setup window with **View › Sample Sheet** in the Pump Manager.

Filling in the sample sheet

Click a field and type. The sheet has fields for:

- worker's last name, first name and ID
- sampling site
- sample medium and sample ID
- method followed
- chemicals of interest
- job description
- serial numbers of the pre- and post-sample calibrators
- environmental conditions: humidity, atmospheric pressure
- analysis: dates sent to and returned from the laboratory, results, analysed by

- sampled by and audited by, each with a date
- comments

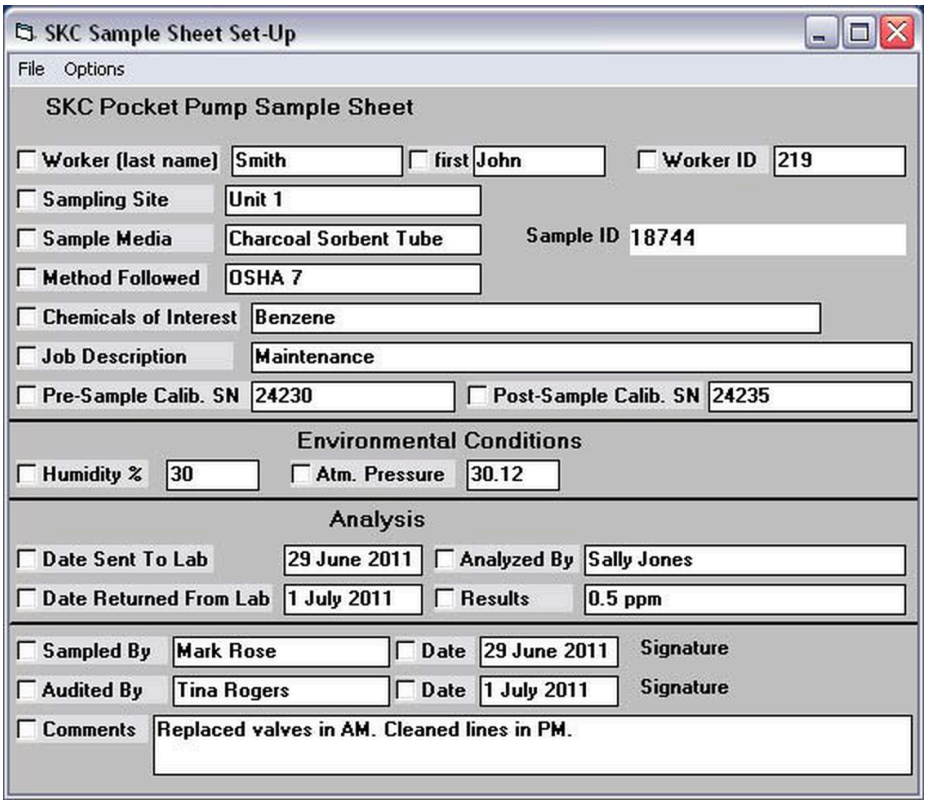


Figure 26. The **SKC Sample Sheet Setup** window.

Saving, loading and merging

A **setup file** keeps every field of the sheet. A **template** keeps only the fields whose box is ticked — tick the small box in front of the fields that rarely change, so you do not have to type them for every sample.

Menu	Command	What it does
File	**New**	Empties all fields.
	Load Setup	Loads a setup file (.stp).
	Load Template	Loads a template file (.tpl); fill in the remaining fields.
	Save Setup	Saves all fields as a setup file (.stp).
	Save Template	Saves the ticked fields as a template file (.tpl).
	Print	Prints the sheet or profile shown on screen.
	Exit	Returns to the Pump Manager.
Options	**Merge Pump**	Adds the history of the connected pump to the sheet and creates a worker exposure profile (.rpt).
	Merge File	Adds the history from a saved history file (.hst) to the sheet and creates a worker exposure profile (.rpt).

Worker exposure profile

Fill in the sheet, then choose **Options › Merge Pump** for the history of the pump now connected, or **Options › Merge File** for a history saved earlier. DataTrac saves the profile as a .rpt file and shows it on screen; **File › Print** prints it, and **View › Report** in the Pump Manager opens it again later.

The printed profile starts with the file name, the print date, the pump serial number and the minimum, maximum and time-weighted average temperatures. The sample sheet follows, then the pump history

with the columns Mode, Value, Start, Volume (litres), Accumulated Volume and Duration.

Advanced topics

This section explains how the pump keeps time between runs, what that means for the history, and how to change DataTrac's settings file and process history files in other programs.

NOTICE

Editing the settings file is for users who know Windows and its configuration files well. A wrong entry changes how DataTrac programs every pump. Keep a copy of the file before you change it.

Sleep, Hibernate and battery life

After 5 minutes in Hold, the Pocket Pump powers down into **Sleep**. The pump and its display are off, but the microprocessor keeps running to keep track of time — and draws a significant current from the battery to do so. A programmed pump sleeps from the moment it is programmed until its first run, which preserves the start times.

When the last programmed run has finished, the pump goes to Hold and its timer runs on for 24 hours. After that the timer stops to save the battery: the history up to that point is kept, and the pump enters the low-power **Hibernate** state.

9 Oct, 7:00 AM	9 Oct, 9:00 AM	9 Oct, 10:00 AM	10 Oct, 10:00 AM
Pump programmed — Sleep	Program running — Run	Program ends — Sleep	24 hours later — Hibernate

A fully charged, programmed pump lasts about 6 days in Sleep before its low-battery detection switches it to Hibernate. A program that is still waiting to run keeps the pump out of Hibernate until a low battery forces it in.

Tip

DataTrac accepts programs up to 21 days ahead, but load a program as close to its start as possible, and download the history to the PC as soon as possible after sampling.

History and Hibernate

Every state in the history — Run, Hold, Sleep, Hibernate, Low Battery Hold, Flow Fault — carries a time of day. When the pump is programmed, it receives a time reference from the PC; when the history is read, DataTrac compares that reference with the PC's current time to keep the timing consistent.

- **One Hibernate in the history:** times before it are calculated from the programming time; times after it from the PC time at download.
- **More than one Hibernate:** the periods between two Hibernates keep valid durations, but their real start and stop times are unknown.

7 AM	9 AM	10 AM	later				3 PM
Sleep	Run	Sleep	Hibernate	Run	Sleep	Hibernate	Run
START AND STOP TIMES INTACT			START AND STOP TIMES LOST				CALCULABLE

Example: pump programmed at 7 AM, data downloaded at 3 PM. The last run's times follow from the download time and its known duration.

The settings file PPump.ini

DataTrac keeps its settings in `C:\Windows\PPump.ini`. Its run-time commands apply to the program and take effect when the program is sent with **ToPump**. Edit the file with Notepad or another text editor; upper and lower case do not matter. A typical file:

```
UserLockOut=N
TempUnits=F
PressureUnits=inches water
ResetVolTime=n
ResetTemps=n
ClearHistory=n
HistorySeparator=9
ScheduleStart=6:45 AM
DefaultDir=
port=2
startups=33
lastused=Oct 20 2010 12:17:45 PM
firstused=Sep 11 2010 9:12:54 AM
```

`UserLockOut`	Y: the pump user can only view the pump parameters, with the middle (star) button. N: all functions are available, such as changing the flow or putting the pump in Hold.
`TempUnits`	F (Fahrenheit) or C (Celsius). Applies only in the Enhanced display mode.
`PressureUnits`	inches water or mm mercury. Only the first letter (i or m) counts; the rest may be written out for clarity.
`ResetVolTime`	Y sets the volume and run time to zero.
`ResetTemps`	Y sets Min, Max and TWA temperature to zero.
`ClearHistory`	Y deletes the whole history in the pump's memory.
`HistorySeparator`	0 to 255: the ASCII code of the character that separates the columns of saved history files. Needed only when history files go into another program such as a spreadsheet. Default 9 (Tab).
`ScheduleStart`	A time such as 6:45 AM or 11:30 PM. A completed program stays on the PC with start times that have expired. When you next open the Pump Scheduler, DataTrac asks "No Program Schedule. Load Expired Schedule In Arbitrary Time Frame?". Yes reloads the program to start the next day at this time, with the runs keeping their spacing.
`DefaultDir`	Any valid folder: the folder the save and open dialogs start in.
`port`	1 to 10: the serial port the pump uses. DataTrac writes it automatically once a working port has been found.
`startups`	How many times DataTrac has been started.
`lastused / firstused`	Date and time DataTrac was last / first run.

History files in a spreadsheet

History files (.hst) are plain text with one value or one period per line, and can be loaded into a spreadsheet or another program. The start of a typical file:

```
HISTORY FILE
1000
SN 1788
34975.431632
Min Temp 75.2F
Max Temp 100.4F
TWA Temp 84.4F
9
8
0  141  34992.625694  34992.648611  -1
```

Line	Content
1	File type: HISTORY FILE
2	Software revision number
3	Pump serial number
4	Date and time the file was saved (time field, see below)
5–7	Minimum, maximum and time-weighted average temperature while the pump was running (not updated in Hold)
8	ASCII code of the column separator (default 9, Tab)
9	Number of history periods that follow
10 onwards	One line per period, most recent first, in five columns:

Column	Content
1	Pump mode: 0 constant flow · 8 constant pressure · 16 flow fault in constant flow · 24 flow fault in constant pressure · 32 Hibernate · 64 low-battery fault
2	Rate: flow or pressure, according to column 1
3	Start date and time (time field)
4	Stop date and time (time field)
5	−1 valid or 0 invalid timing. After a Hibernate or a low-battery fault the pump can no longer tell the time reliably and marks the period 0. The start and stop times are then not real times, but stop minus start still gives the run time.

Decoding time fields

A time field counts days since midnight on 30 December 1899. The whole number is the day, the decimals the time of day: 0 is midnight, 0.5 noon, 0.9999884 one second before midnight.

Value	Date and time
0.25	30 Dec 1899, 6:00 AM
0.75	30 Dec 1899, 6:00 PM
1.5	31 Dec 1899, noon
365.25	30 Dec 1900, 6:00 AM
35065.625	1 Jan 1996, 3:00 PM

This is the date format of several Windows programs. In Excel, format the imported cells as date and time (for example `m/d/yy h:mm`) and widen the column so that the date and time fit.

CHAPTER 5

Troubleshooting

Problem	Remedy
The installation wizard reports an error.	Run the installation again (see Installing DataTrac (p. 10)).
The hardware wizard wants to install software other than "USB Serial Port".	Cancel the wizard and plug the adapter cable into a different USB port.
An error box appears instead of the handshake symbol.	Wake the pump with a keypad button, check the cable and click **Retry**. If it persists, give the adapter cable a COM port from 5 to 9 (see Changing the COM port number (p. 12)).
Most functions are unavailable.	DataTrac was opened with **Ignore** or without a pump. Connect and wake the pump, then restart DataTrac and click **Connect to Pump**.
An error message appears each time a pump is unplugged.	Comm Checking is on. Switch it off when you work through several pumps (see Comm Checking (p. 20)).
A programmed run started or stopped at the wrong time.	Check the PC's date and time and send the program again. A sleeping pump that is woken shifts later start times by up to one minute each time.
The pump keypad does not change any setting, and PROG stays on the display after the last run.	User Lock Out is set. Send a program with User Lock Out set to No (see Run-time options (p. 19)).
The flow correction is back at 0.0.	The flow setting was changed on the pump, which clears the correction. Calibrate again (see Calibrating the flow (p. 15)).
The TWA temperature is erratic just after a reset.	Put the pump in Hold before resetting temperatures or volume.
The history shows less volume than the pump display.	A flow fault occurred; the restart attempts are not recorded in the history (see Reading the history (p. 22)).
History start and stop times are missing or marked invalid.	The pump hibernated (see History and Hibernate (p. 25)). Durations are still valid.

If none of these remedies helps, contact Analyt-MTC (see Service, warranty and contacts (p. 30)).

CHAPTER 6

Ordering information

Order from Analyt-MTC with the order codes.

For any other version, contact Analyt-MTC.

Description	Order code
DataTrac interface and software kit for the Pocket Pump: DataTrac software on CD-ROM and DataTrac USB adapter cable	877-90K
DataTrac USB adapter cable for the Pocket Pump, as a replacement	P22103A

CHAPTER 7

Service, warranty and contacts

Analyt-MTC is your contact for DataTrac and the Pocket Pump: installation questions, replacement adapter cables, calibration, repairs and warranty claims. Warranty claims are handled under Analyt-MTC's terms and conditions.

Contact

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Before you contact Analyt-MTC

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

- the DataTrac version, pump firmware revision and pump serial number from the About menu (The Pump Manager window (p. 8));
- your Windows version;
- what happened, and the saved history file (.hst) if the question concerns a sample run.

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