

Sysmatec

Laboratory instruments

Products 2016

www.sysmatec.ch

Peristaltic Pumps

The development of this pump was based on twenty years of laboratory experience and the systematic elimination of imperfections found in other pumps on the market. The result is a practical, precise and reliable pump which is the most compact in its class.

Preciflow Pump



- rate settings from 0.01 to 600 ml/hr
- digital set point extending over three orders of magnitude
- remote controls (closed contact, 0-10 V, option RS485)
- greatly extended tubing life and decreased pulsation
- separate plug-in power supply for increased safety.
- the PUMP FLOW INTEGRATOR allows the exact recording of the amount of liquid delivered by the pump
- very economical in use while using low cost tubing without stoppers

Multiflow Pump



- same as PRECIFLOW but with flow rate programming (up to 99 steps)

Hiflow / Maxiflow



- same as MULTIFLOW but flow rates from 0.1 to 3000 ml/hr and 0.1 to 10 000 ml/h

Doser



- This instrument allows the automatic addition of powder.
- The remote control allows the doser to be used in automated controlled reactions.
- The apparatus is easy to clean and to assembly.
- Several seals make the doser air-tight. It can be utilised with slightly reduced or increased pressure. It can also be flushed with an inert gas if necessary for a given reaction.
- The doser can be connected to the INTEGRATOR, which allows quantification of the amount of solids added.
- Capacity: ca 200 ml (equivalent to 250 g NaCl)
- Flow rate: 50 mg/min to 50 g/min (NaCl)
- Remote control (for controllers or computer control): external contact, 0-10 V or option RS485.



Integrator



- Connected to the PRECIFLOW Pump or DOSER, the integrator will allow to know the amount of liquid pumped as a function of time to be recorded.
 - Output 0-5 V or RS485
 - When the pump is used for the regulation of reaction conditions such as pH, temperature or other parameters, it is important to know how much of the solution (acid or base for example) has been added to maintain a constant pH. This additional data will inform you about the kinetics of the process, its completion or even disturbances that have occurred during the process.
-

Vitfit Syringe Pump



- The new Vitfit syringe pump incorporates a new syringe fixing system which allows almost any syringe to be used, from micro syringes to large volume syringes without the use of a special adapter.
 - The handling the syringes is very easy. The syringe is tightly held in both directions - infusion and filling.
 - Very good flow rate precision.
 - Programmable (99 steps)
 - Remote control (for controllers or computer control): external contact, 0-10 V or option RS485.
-

Fractions collector Omnicoll



- Collects fractions in tubes of all sizes and in any existing rack.
- Collects unlimited number of fractions. Several racks supports can be combined.
- Easy programming of rack and tube position.
- Fractionation according to time (0.1 to 999.9 min) or volume (0.01 to 500 ml)
- A pause (0.1 to 999.9 min.) or washing of tubing between fractions can be programmed.
- The same sample can be distributed between several tubes at the same time.
- Can easily be placed in a thermostabilised container.



Fermentor Minifor



- The Minifor was developed as a small laboratory fermenter for liquid volumes from 50 – 5000 ml.
- Is easy to use.
- It has the capacity to measure and control all the important parameters of the biological culture (temperature, pH, pO₂, aeration, agitation).
- The fermenter is very compact but allows good access to all parts.
- Several fermenters used in parallel are suitable for the optimisation of growth or production parameters.
- Can be used as well for cell culture as for microorganisms.
- Each fermenter can be connected to a PC for advanced regulation and extensive data handling.

Anaerobic jars

(for culturing anaerobic and microaerobic microorganisms)



- For the cultivation of anaerobic and microaerophilic microorganisms in a defined gas atmosphere.
- Principle: Evacuating (with vacuum pump) and filling with gas (e.g. nitrogen) without chemical accessories, or with chemical anaerobic systems (GasPacks), available as accessories.
- They are break-proof and non-ageing, made of robust stainless steel or transparent polycarbonate
- Lids: UV-resistant plastic or transparent polycarbonate
- The most of them are equipped with two corner valves incl. tube clips for flushing and vacuum hoses (5 mm inner-Ø) with manometer for exact control of the vacuum or over pressure (-1 to 0.2 bar).



Balances



KERN 440

- Maximum: 40 g to 6 000 g
- Very good quality/price
- Interface: RS232

KERN 572

- Maximum: 810 g to 16 100 g
- Interface: RS232

And all the KERN balances



ADAM WBW

- Maximum: 2 kg to 16 kg
- IP66

And all the Adam balances

Moisture analyzing



KERN MLB

- 3 displays for temperature, drying state (%), time
- Heating with quartz halogen heaters 2 x 200 W
- Temperature: 50 to 160 °C in steps of 1°C

Temperature data logger



HT200

- Stainless steel waterproof case
 - For extreme conditions (-40°C to 125 °C)
 - Precision +/- 1 °C, Battery life 5 year
 - Data capacity 7936 points
 - 21CFR11 compliant software in option
 - Size: about 10 cm x 2 cm
- And all the temperature/humidity Dickson dataloggers

Temperature Data Logger MINNOW T

- Temperature range: -30 °C to 80 °C
- Resolution: 0.01 °C
- Accuracy: +/-0.3 °C (5 to 60 °C) else +/-1.0 °C
- Run Modes: start on button press, start at scheduled time, start on disconnect, real time logging (displays real time data when connected)
- Power: user replaceable CR2450 battery, up to 4 year battery life while logging
- Dimensions: 53mm x 33mm x 15mm
- USB cable included with unit



Temperature and Humidity Chart Recorder



THDX

- Temperature range: from -20 °C to 50 °C
- Humidity range : from 0 to 95 %
- Temperature accuracy: +/- 1 °C
- Humidity accuracy: +/- 2 %

And all the temperature/humidity Dickson dataloggers

Digital thermometer



D154

- Temperature range -50°C à 300 °C
- Précision +/- 1 °C
- Battery life 1 year

And all the temperature/humidity Dickson dataloggers

Fiber Optic Spectrometer



- For UV-VIS-Shortwave NIR (200-1100 nm)
- This compact optical bench, with no moving parts, has a high-sensitivity 2048-element linear CCD-array detector that accepts light energy transmitted through single-strand optical fiber and disperses it via a fixed grating across the array.
- 14 gratings: UV through Shortwave NIR

LED Display



Size:

- 758 x 248mm, 4 lines x 20 characters
- 1530 x 120 mm, 2 lines x 40 characters

Uses

- Alarm message, Process data, Advertising
- Use in explosive atmospheres (option)
- The message can be sent from Computer, Controllers, Pager, SMS

Supplementary connections

- Printer to print the message
- Acoustic or light signal for new incoming message



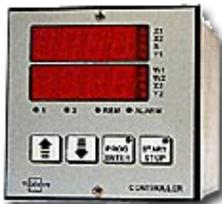
Data acquisition and control



- The system can be configured without any specialised knowledge of computer languages, by means of the user interface.
- The box is an interface between the process and a computer. It is designed to connect directly the sensors and the device to control.
- 8 analog input (0/4-20 mA, 0-10 V, thermoelement, Pt100).
- 8 digital output (relay)
- 4 analog output (0/4-20 mA, 0-10 V)
- 4 digital input
- Communication with a computer through RS485
- Specially designed for the software Siam
- Other configuration are available on demand

Industrial Controllers

All the controllers are equipped with electronic micro-controllers. They all have an RS485 interface for communication with a PC. A specially designed software programme is available for communication with a PC.



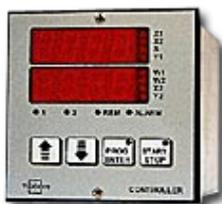
Temperature Controller TECON 131

- PID controller
- Outputs: 2 relays (max. 230 V, 2 A)
- Input for 1 sensor (Pt100, thermoelements, 0/4-20 mA)
- Analog output 0/4-20 mA



Temperature Controller TECON 238

- 8 PID controllers
- Outputs: 8 relays (max. 230 V, 2 A)
- 3 additional relays (max. 230 V, 1 A)
- Input for 2 sensors (Pt100, thermoelements, 0/4-20 mA)
- 4 analog outputs 0/4-20 mA
- 5 digital inputs 24 V



Temperature Controller TECON 501 A

- 2 PID controllers
- Outputs: 2 relays (max. 230 V, 2 A)
- 3 additional relays (max. 230 V, 1 A)
- Input for 2 sensors (Pt100, thermoelements, 0/4-20 mA)
- 2 analog outputs 0/4-20 mA
- 1 analog input 0/4-20 mA
- 1 digital input 24 V
- Set point profile with 99 steps



Laboratory controllers

All the controllers are equipped with electronic micro-controllers. They all have an RS485 interface for communication with a PC. A specially designed software programme is available for communication with a PC.



pH Controller TECON UR 5 P

- The controller is designed to maintain pH or redox potential.
- 2 outputs (acid and base): digital (24 V) or analoguous (0/4-20 mA)
- pH profile: 9 steps



Flow and Dosing Controller TECON UR 5 D

- The controller is designed for dosing from or to a balance, metering flow is also possible
- Range: 0-10 kg or l
- Output: pumps, valves (24 V or 0/4-20 mA)
- Profile: 9 steps



Temperature Controller TECON UR 5 T and TK

- PID controller with self adaptation
- Output for heating (max. 2300 W) and cooling (max. 24 V, 2 A)
- Input for 2 sensors (Pt100 or thermocouple in option)
- Analog output 0/4-20 mA
- Programmable temperature profile



Pressure Controller TECON UR 5 V

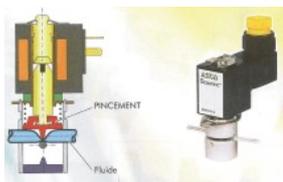
- PID controller with self adaptation
- Adapted for reactor volumes from 0.2 l to 10 l .
- The pressure or vacuum pump can be directly connected to the controller.
- Programmable pressure profile



Gas Flow Controller MASSFLOW

- Flow rates: 0 to 5,0 l/min.
- Maximum system pressure: 0,2 Mpa
- Programmable flow rate profile
- Can be used for pH control with CO₂ for cell culture

Valve



Micro solenoid valve - pinch mechanism 284 Serie

- For sterile, aseptic, physiological and food applications
- A single component in contact with the fluid, i.e. the tube
- Differential pressure: 0 à 0,8 bar
- No dead volume

And all the Asco Joucomatic valves.



Reactor for chemistry



Atlas Potassium reactor

Designed for chemists who perform reactions in jacketed reactors. With an easy to use vessel clamping system and integral oil drain module, Atlas Potassium vessels can be changed in under a minute. Integrated temperature and circulator control from the Atlas base unit make reactions easier than ever before.

Vacuum pump system



KNF SC 920 with portable terminal

This new vacuum pump system now supports remote control over a portable hand terminal.

A pressure sensor measures the actual pressure in the system several times per second, and a microprocessor monitors any pressure drop over time. The pump speed is adapted according to this information constantly.

Tubes



in PTFE, PFA, FEP, silicon

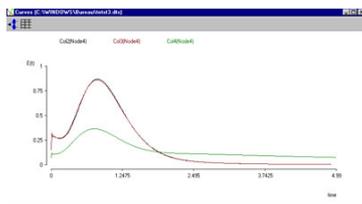
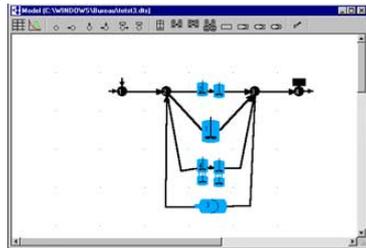
- excellente résistance chimique
- gamme de température très large
- ne contient pas de produit contaminant extractible

tuyaux silicone pour les pompes péristaltiques



DTS

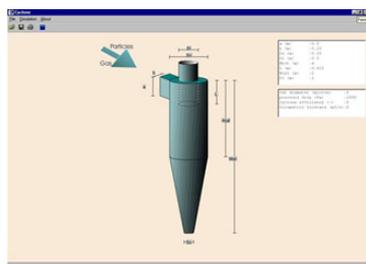
(Flow Simulation)



- The concept of Residence Time Distribution provides a general description of flow patterns with direct access to hydrodynamic parameters of interest to the engineer: mixing zones, plug-flow, short-circuits, dead volumes, recycle loops...
- The "D.T.S." software package facilitates the simulation of flow models with the Residence Time Distribution method. In particular, it simplifies interpretation of tracer experiments in reactors in other industrial and laboratory systems.
- A simple and user-friendly software tool.
- Using a tool box, the user can directly build a flow model by connecting different elementary modules (mixing-cell, perfect mixing-cells in series, plug-flow reactor, mixing-cell in series with exchange).
- The software automatically gives the theoretical response to any tracer injection (impulsion, step, or any other signal) without writing any mass balance equations.
- In order to fit the model to tracer experiments, the software can easily optimize one or several parameters.
- Distributed under licence from PROGEPI (INPL, Nancy, France)

Cyclone

(Cyclone dimensioning)

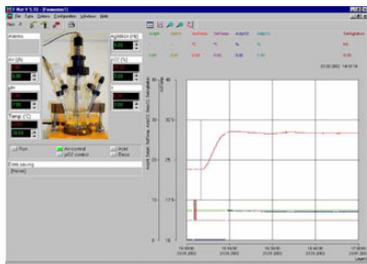


- User friendly program for dimensioning the cyclone.
- It provides calculation of cyclone efficiency for a given geometry or geometry for a given efficiency.
- The simulation results appear on the screen directly.
- No need to enter any equation
- Distributed under licence from PROGEPI (INPL, Nancy, France)



FNet

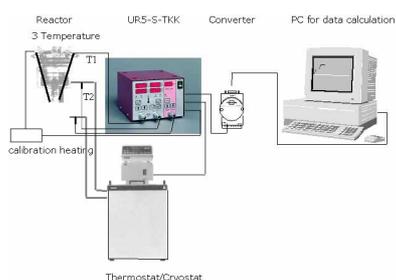
(Software for the Minifor fermentor)



- This easy to use programme has been specially developed for the MINIFOR fermenter. All the connection cables and adapters are included in the package.
- Connections for 1 to 6 fermenters.
- Connections for 1 to 6 supplementary pumps
- Connections for 1 to 12 Integrator to monitor the amount of acid or base added.
- All the actual values and setpoints (temperature, pH, air flow rate, pO₂, RPM, supplementary parameter) are displayed on the screen. Their values can also be displayed as trends. The user can then see the evolution of the fermentation parameters.
- All the setpoints and alarms can be changed from the PC
- The actual values and setpoints can be stored in a text file at a defined time intervals. The output files are compatible with the most programmes on the market for statistical analysis or reporting.
- A profile can be defined for every setpoint.
- The programme can be used to confirm that the required conditions have been achieved (by comparing the setpoints with the actual values on the trends). The data files for different fermentations can also be compared in order to optimise the process.

ScreenCAL

(Heat flow calorimetry)



- Calorimetric measurements are obtained with cascade controllers connected to a cryostat and a reactor.
- In a first step experiments are carried out to calibrate the system. This can be done with a heating device. The software can then calculate the heating constant. The calibration can be done manually and or automatically.
- The second step is the determination of the energy during the reaction.
- With ScreenCAL both, isothermal and dynamics measurements can be run.



SupNet

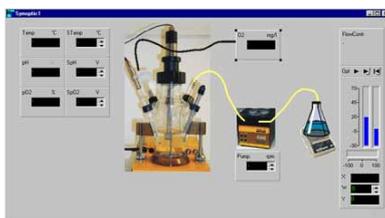
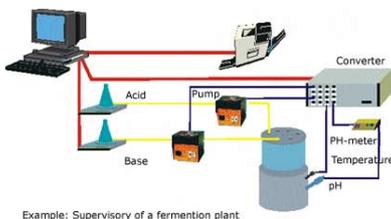
(Software for the TECON Supervisor 350 datalogger)



- This easy to use programme has been specially developed for this data logger. All the connection cables and adapters are included in the package. The user can then see the evolution of the process parameters.
- All the 8 actual values are displayed on the screen in the same window. Their values can also be displayed as trends.
- The actual values can be stored in a text file at a defined time intervals. The output files are compatible with the most programmes on the market for statistical analysis or reporting.

Siam

(Automation supervisory software)



- SIAM is a data acquisition- and control-program for PC and compatible computers which runs under Windows. The system can be configured without any knowledge of computer languages by means of the user interface.
- Typical applications are:
 - fermentation
 - control of chemical reactions
 - quality control
 - automation of measurements at laboratory-, pilotplant- and production-scale
 - instruction tool.
- Is easy to adapt to the needs of the process
- Is easy to learn and to use
- possibility of following complex control strategies
- all the paramters can be visualised graphically
- storage of the data on hard or floppy disk
- data transfer to any program that uses ASCII code (spreadsheet, word processing programs,...) or direct DDE communication.
- possibility of controlling several processes at the same time (several reactors, several analytical instruments,...).



Sysmatec
Oberdorfstrasse 51
CH 3930 Eyholz

Reply form

Products :

You can return us this document by:

- post
- fax + 41 27 946 86 42

or send an email :

- info@sysmatec.ch

Company, Department: _____

First name, Name: _____

Address: _____

Postcode, Locality: _____

E-mail address: _____

Tel: _____

