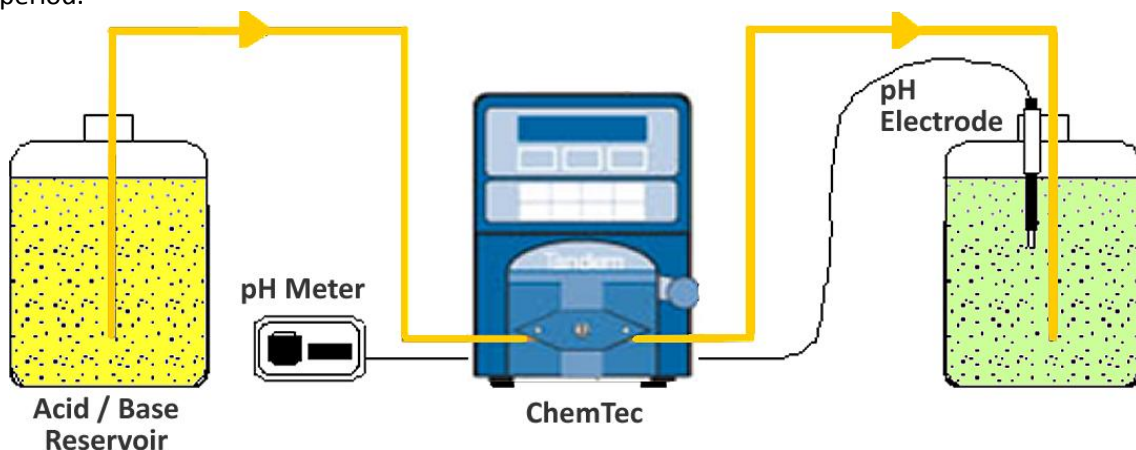


Automated Reactor pH Control and Process Titration

SUMMARY:

The **ChemTec automates pH maintenance** as well as titration in small to medium volume reactor applications. The ChemTec interfaces with a process pH Meter/Transmitter (with 4-20mA output). The ChemTec provides a user-definable **pH-Setpoint** and **pH-Bandwidth**, which the ChemTec maintains by adding small increments of acid or base. The reagent addition rate is automatically reduced as the pH-Setpoint is approached. The user-definable **pH-Delta** represents the pH range during which the pump speed is automatically reduced for optimal pH control. The pH-Setpoint can be maintained indefinitely within a 0.10 pH unit range, i.e. smallest selectable pH-Bandwidth.

For process titration applications, the user-definable pH-Setpoint represents the titration endpoint, e.g. pH = 7.00 for a simple acid / base neutralization. The ChemTec adds reagent incrementally to the reactor until a stable pH-endpoint is reached. A user-definable **Endpoint Delay** represents a time interval during which a stable pH must be maintained. The Endpoint Delay feature is particularly useful in medium volume reactor applications where solution homogeneity is more difficult to achieve. An appropriate Endpoint Delay will ensure that solution homogeneity has been obtained before the titration is terminated at the end of the delay period.



FEATURES:

The following, user-selectable alarm conditions can be monitored, controlled and documented:

1. **High-pH Alarm.**
2. **Low-pH Alarm.**
3. **Reagent Volume Alarm.**
4. **High Pressure Alarm.**

Each selected alarm condition has a user-definable alarm set point as well as associated alarm-enabled action: "Off", "Beep Only" or "Pump Stop". During a "Beep Only" alarm, the ChemTec will beep until the "Run" key has been pressed, however, the ChemTec will continue pumping during the alarm condition. In contrast, during a "Pump Stop" alarm, the ChemTec will beep and all pumping action will cease. During an alarm condition, a contact closure output is available for controlling an external alarm klaxon.

The **High Pressure Alarm** is used together with an (optional) in-line pressure transmitter and with an in-line sterilizing filter cartridge. When the filter cartridge starts to plug up and a user-defined filter backpressure has been exceeded, the alarm will be triggered.

Documentation: The ChemTec generates a data stream for printout or PC display and archiving. Data collection via computer can be directly into a Custom Spreadsheet with SciLog's SciDoc Documentation Package. The data is printed out at user-selectable intervals: pH, Reagent Volume (RV), Pump Rate (PR), Run Time (RT), Pressure (P1), Pump Status (ST) and Alarms (AL)

Pumps and Pump Rates: ChemTec pump heads cover a wide range of pump rates from 0.02 ml/min to 3700 ml/min. Available pump head options include: **Peristaltic Pumps** (for aseptic solution handling), **Magnetic Gear Pumps** (for pulse-free solution delivery) and **Piston Pumps** (for high viscosity, high pressure applications). Consult ChemTec product literature and SciLog's website www.scielog.com or contact SciLog Technical Support at 800-955-1993.

ORDERING INFORMATION: SciLog Customer Service: 1-800-955-1993

SciLog P/N: DESCRIPTION:

100-138MASS	ChemTec CP-120 with a 160-RPM motor and a 1081 TANDEM peristaltic pump head; accommodates thin-walled (1/16" wall thickness) Masterflex [®] pump tube sizes: #13 (0.4 to 9.0 ml/min), #14 (1.4 to 34 ml/min), #16 (4 to 120ml/min), #17 (14 to 410ml/min), and #25 (10 to 240 ml/min).
100-431MASS-8	ChemTec FM-8 with RH0 Piston Pump Head; 8RPM motor; 100 psi max.; pump rate from 0.01 gm/min to 0.4gm/min
100-431MASS	ChemTec FM-420 with RH0 Piston Pump Head; 450RPM motor; 100 psi max.; 0.1 gm/min to 20 gm/min.
100-532MASS	ChemTec FM-520 with RH1 Piston Pump Head: 100 psi max., 10 gm/min to 340 gm/min.
080-095A	Printer , interfaces with ChemTec – documents your process.
080-099CHEM	SciDoc for ChemTec , Documentation Software for ChemTec Data with customized Excel [®] Spreadsheet.
080-405	Small Bore Tubing Kit with 25 feet of 1/8" OD x 1/16" ID Teflon tubing including two pairs of ferrules and nuts (1/4"-28).

Other Pump Head / Motor combinations are available.