



custom

laboratory reactor  
systems



Customized products - flexible solutions

# What are Custom Reactor Systems?

**Syrris' Custom Reactor Systems are designed and built to your specifications. Complete systems including reactors, pressure reactors, stirrers, circulators, RTDs, pumps, sensors, etc. can be configured using virtually any manufacturer's apparatus. Choose from either manual control or total automation using Atlas PC Software.**

## Custom Reactor System benefits

- **Wide volume range:** Reactors from 100ml to 100 litres in glass, stainless steel or Hastelloy.
- **Wide temperature and pressure range:** Reactions can be heated to 380°C and pressurised up to 100 bar.
- **Safe:** Warning alarms and emergency cut-off values or actions can be defined.
- **Control:** High torque stirring including torque measurement.
- **Measured:** Dosing of gas, liquid or powder, with fully automated or manual control.
- **Pressurized:** Reactions such as fully controlled hydrogenations and carbonylations can be performed.
- **Integrated:** Can provide integrated pH and liquid control.
- **Flexible Control:** Manual or fully automated for unattended operation.
- **Easy to use software:** Drag and drop icons allow recipes to be created, edited and run intuitively.
- **Empowering:** Virtually any manufacturer's apparatus can be configured into a system using the software.
- **Powerful:** Apparatus such as pumps and balances can be combined in an intelligent fashion (e.g. enabling gravimetric dosing or dosing to maintain a pH).
- **Automatic data logging:** All responses such as temperature, stirrer speed, pH, mass flow etc. can be graphically displayed in real time and are continually saved to one .csv file.

## Custom Reactor Systems

With over 200 man years of combined experience, Syrris chemists and engineers manufacture the highest quality customized systems. They are assembled to your specification and rigorously tested at our facility before installation at your laboratory.

## Case Studies

**Case Study 1:** 20 litre automated synthesis system for a world leading pharmaceutical company. This included high torque stirring, volumetric liquid addition and temperature monitoring.

**Case Study 2:** Two interchangeable reactors (5 and 10 litres) with speed and torque monitoring. Temperature dependant gravimetric dosing with full data-logging.

## Pre-configured Apparatus

Virtually any RS232 device with ASCII communications can be configured. The current list of pre-configured devices is below:

### Balances

- Denver
- Mettler
- Oxford
- Sartorius

### Flow Meters

- Aalborg
- Sierra

### Overhead Stirrers

- IKA
- Heidolph

### pH Meters

- Syrris Atlas
- Denver
- Knick
- Mettler Toledo

### FBRM

- Lasentec

### FTIR

- Bruker

### Circulators

- Huber
- Julabo
- Lauda
- Haake

### Temperature Sensors

- Syrris Atlas
- Cole Palmer
- JKem

### Turbidity

- Syrris Atlas
- Mettler Toledo\*

### Pumps

- Syrris Atlas (syringe)
- ProMinent\*
- Cole Palmer (peristaltic)
- IKA (peristaltic)
- Watson Marlow (peristaltic)
- New ERA (syringe)

### Vacuum Controllers

- Vacuubrand

\*(with RS232 to analogue converter)



**Left:** The Atlas Software's intuitive display

**Above:** High pressure reactor

**Right:** 10 litre Custom Reactor System with software control



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