Büchi «flexyclave»

The automated hydrogenation solution for laboratory and scale-up

- Easy handling
- Safe operation
- High reproducibility
- Increased productivity
- Recipe control
- Flexibility
- Graphical data evaluation
- Automatic protocol
- Compact design
- Turn-Key solution

in cooperation with SYSTAG

BÜCHI – THE WAY TO GET RESULTS!

KK

büchiglasuster
switzerland
Pilot Plant and Reactor Systems

«flexyclave»

The Turn-Key Hydrogenation Solution

Result of a Büchi – Systag cooperation

The easy to use recipe control software with predefined steps and operating procedures makes hydrogenations accurate, reproducible and safe. Processes can be standardized which facilitates up-scaling from laboratory to pilot plant and production scale. Easy operation allows the user to carry out hydrogenations quickly and safely. The manual mode guarantees high flexibility at all times. Sophisticated alarm- and supervisory functions, allows the system to be run unattended. All process parameters, operator manipulations and results are continuously and automatically recorded, ideal for process evaluation and fine tuning for a next run.

«ecoclave» pressure reactor with glass vessel and gas dosing unit

Visual observation of reaction with glass vessel

Polycarbonate protection door for optimal user safety

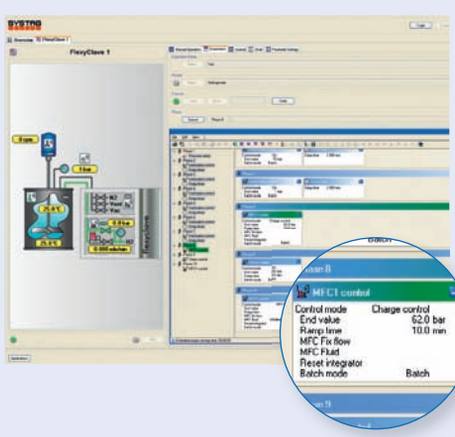
Turbine stirrer with gassing stirrer shaft for effective gas dispersion

Including piping and wiring

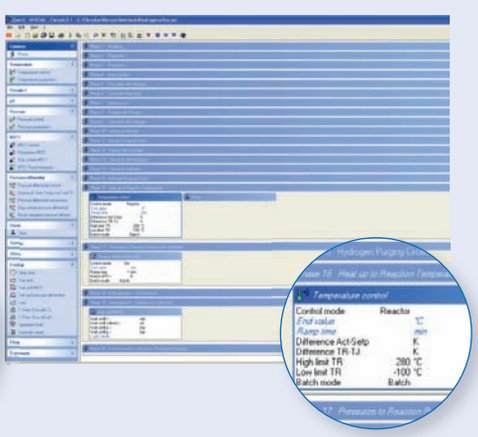
Compact gas dosing unit containing electronics, flow measuring, control and dosing valves

FlexySys-Software

Automation with recipes – Simple operation



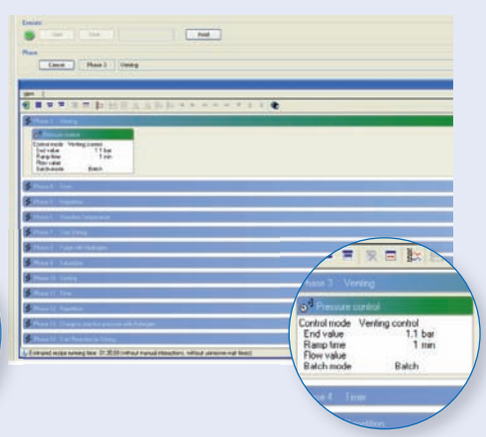
Intuitive plant synoptic, because …
… not only specialists do hydrogenations



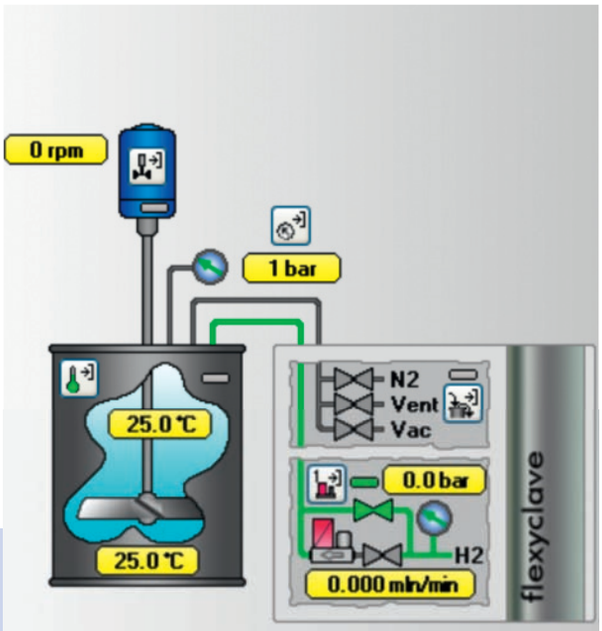
Predefined operating procedures for simple and safe operation

- reaction temperature
- reaction pressure
- end criteria

… ready, steady, go

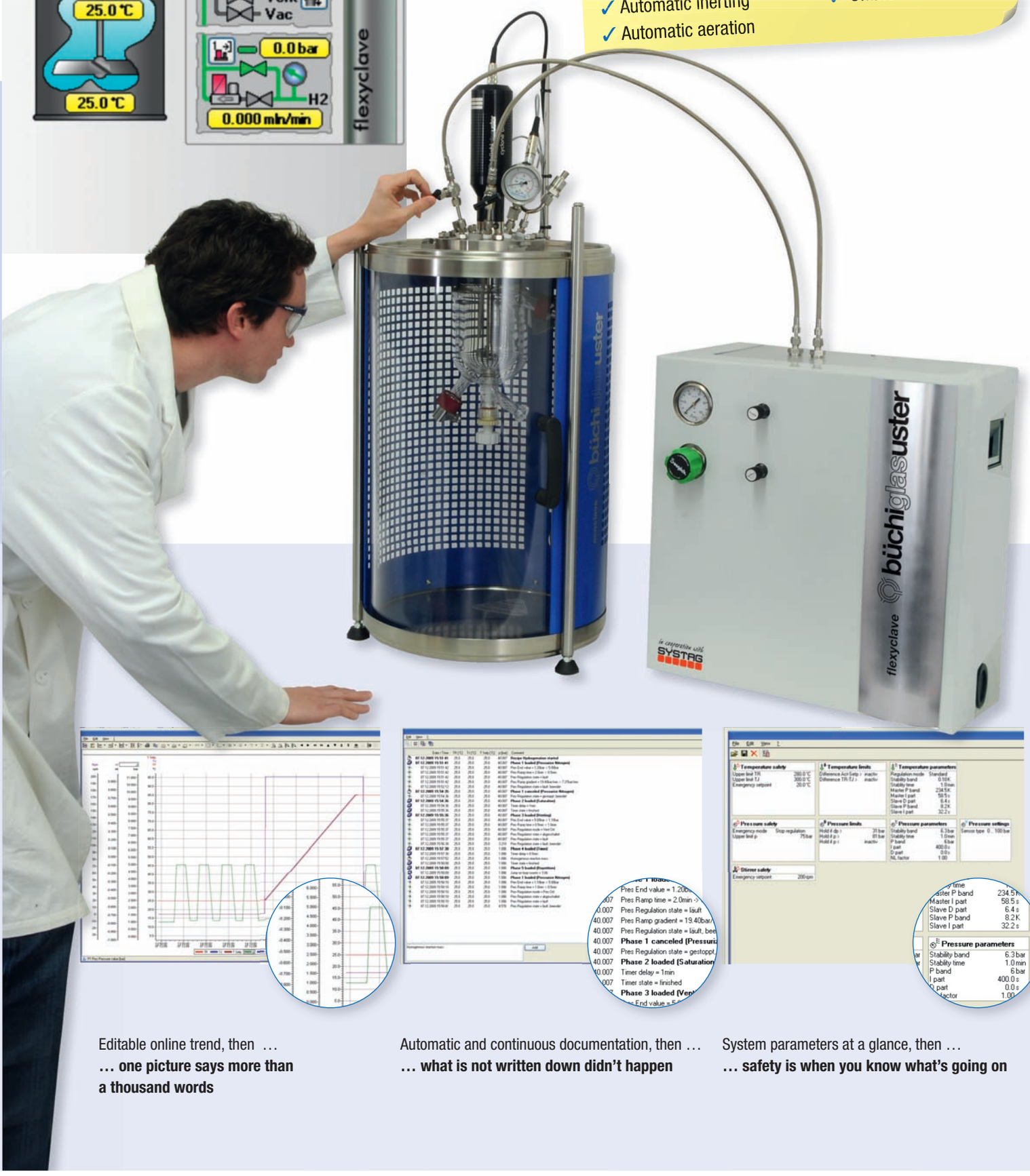


Clear illustration of system status, then …
… you know where your process is – exactly!



Functions

- ✓ Hydrogenation with MFC
- ✓ Different end criterias
- ✓ Temperature control
- ✓ Reactor / Jacket / Ramping
- ✓ Pressure- / Vacuum control
- ✓ Automatic inerting
- ✓ Automatic aeration
- ✓ Stirrer speed control
- ✓ Recipe control
- ✓ Visual process control using online graphs
- ✓ Data report
- ✓ Offline-calculations



Editable online trend, then …
… one picture says more than a thousand words

Automatic and continuous documentation, then …
… what is not written down didn't happen

System parameters at a glance, then …
… safety is when you know what's going on

Technical data

PC-Hardware / Software

CPU	® Core™ 2 Duo E7500 with VT (2.93GHz, 3M, 1066MHz)
RAM	min. 2048MB
LAN	2 x Ethernet (100 MBit / s)
Monitor	min. TFT 19" (resolution min. 1280 x 1024)
Operating system	Windows XP Professional
.Net Framework	Microsoft .Net Framework 2.0
Office	Office 2003 or 2007 Basic (Word & Excel)

Reactor

Frame	stainless steel construction with polycarbonate-safety screen
Agitator	«cyclone 075» magnetic drive, 100...3000 rpm, max. torque 75Ncm, gassing stirrer shaft with turbine stirrer
Cover plate	with 7 openings, 5x⅛" NPT, 1x⅜" NPT, 1x½" NPT
Vessel	glass vessel Type 1B, 1.0 liter, with jacket and Torion bottom valve, max. –1...+6 bar, max. –50...+200°C
Accessories	Manometer, bursting disc, pressure transducer, Pt100 sensor, speed sensor, 2 control valves, addition funnel with screw cap, baffle
Material	all product touched parts are made of borosilicate glass 3.3 or stainless steel 1.4435 / 1.4571 (316 / 316Ti)
Design	manufactured and tested according PED, AD2000
Dimensions	H x W x D 1000 x 500 x 500 mm

Thermostat	is not included. We recommend models from Huber or Julabo. Others upon request

Control unit

PLC	2 x 65HC11-Processors, 16 bit A/D converter, RS-232 interface
Operating temperature	10 .. 35 °C
Mains supply	230 VAC, 10A, 50 / 60 Hz, single phase, uninterupted
Dimensions	H x W x D 510 x 510 x 280 mm
Utilities	Gas supply on top, signals and power on left or right
Online recording	of temperature setpoint, reactor internal temperature, reactor jacket temperature, stirrer speed, hydrogen flow, hydrogen consumption
Safety supervision	of temperature, pressure and hydrogen leakage inside control unit
Continuous recording	of all manual and recipe interventions
Temperature meas. range	-100°C to 300°C, resolution 0.1K
Hydrogen	minimum flow 0.16 to 8 ml per minute maximum flow 0.16 to 25 L per minute maximum pressure 64 bar

Options

Special executions are no problem. Upon request we can accommodate almost every wish:

- higher pressure and temperature
- other materials (Hastelloy, titanium, etc.)
- bigger reactors (up to 20 liter)
- agitator cyclone 300
- liquid dosage
- pH measurement / control
- other applications
- CFR21 Part 11
- qualification
- PAT – RTA
- custom software functions

Ask us!

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