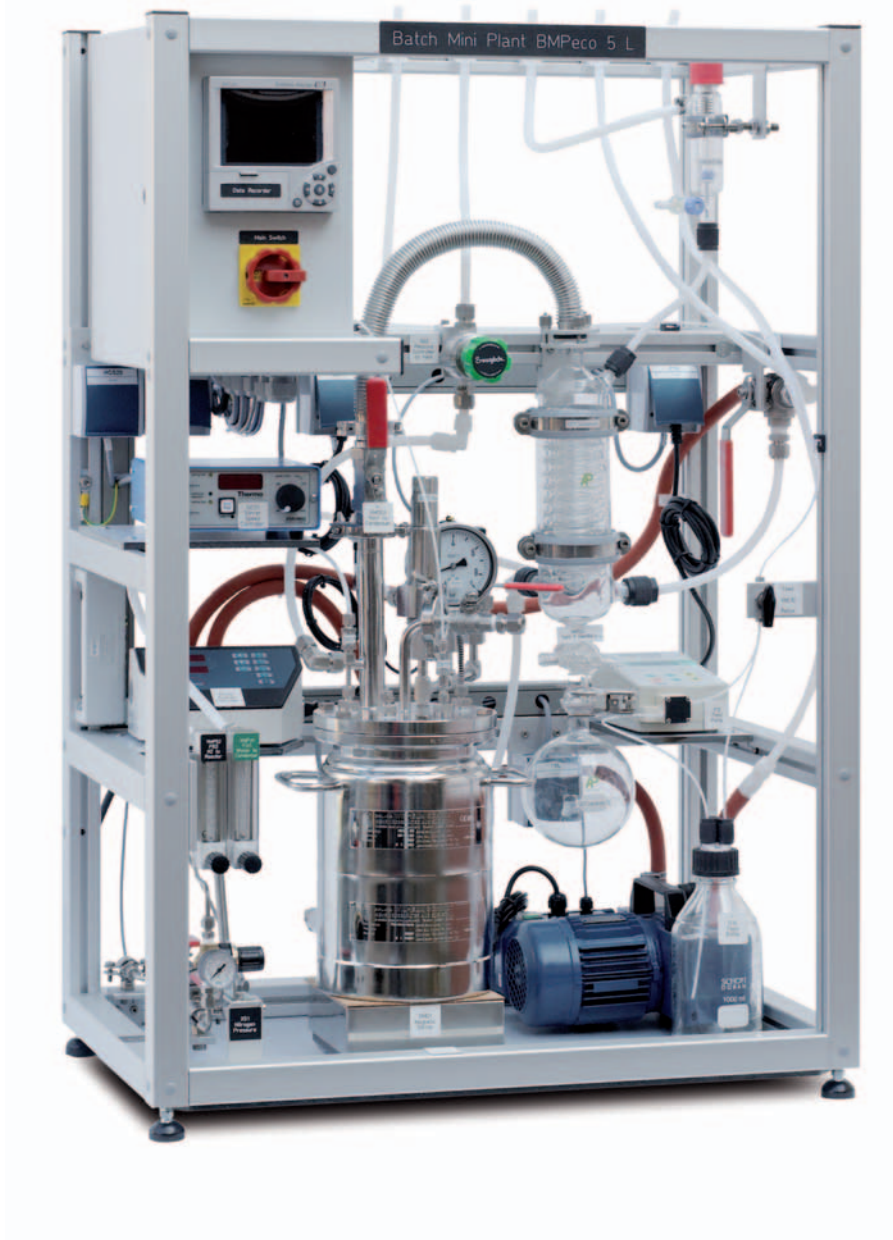


*For Universal Use in Research
and Small Scale Production*



The New Batch Miniplant BMPeco

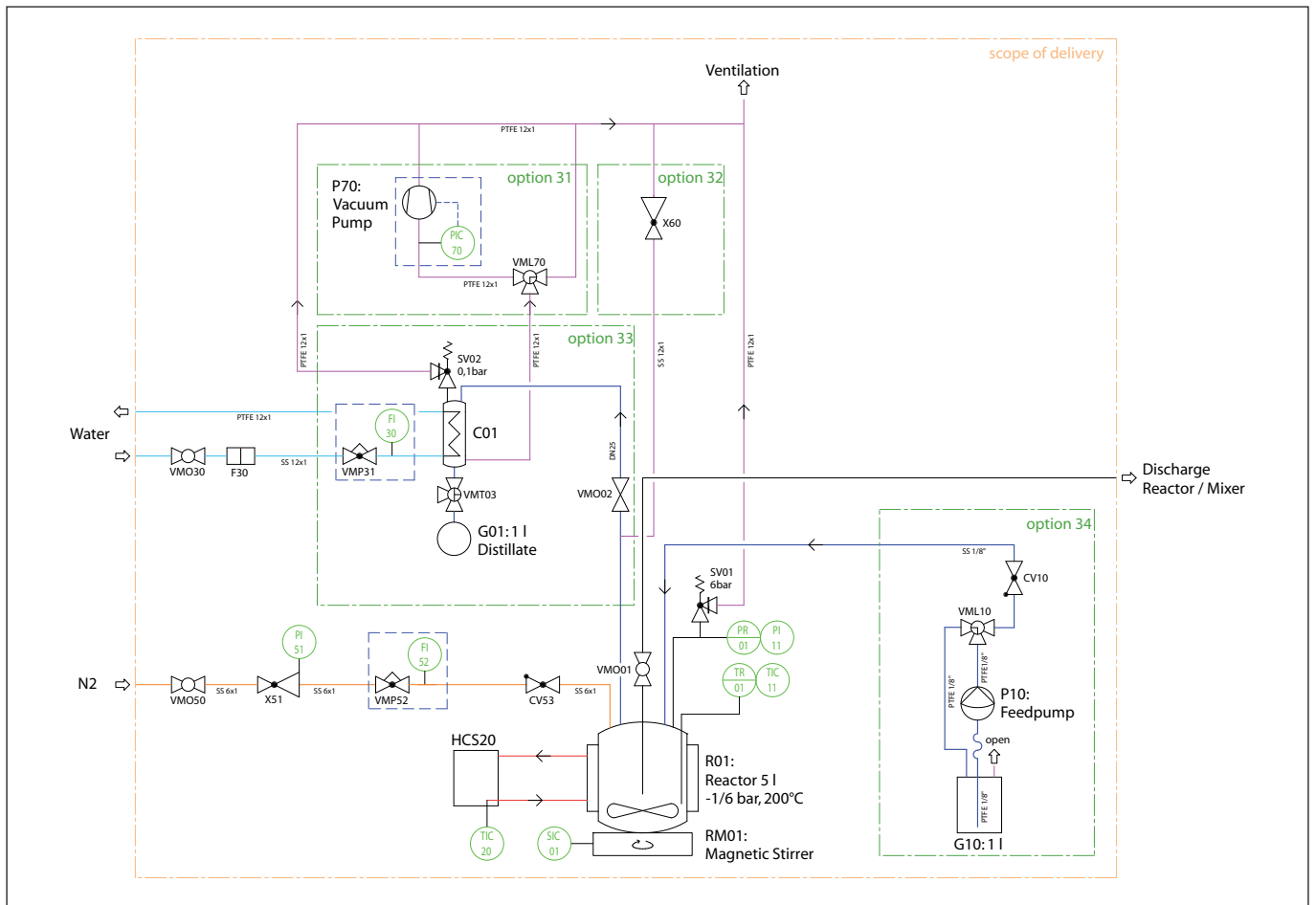


- **Modular Configuration**
- **Best Value for Money**
- **Compact Design**

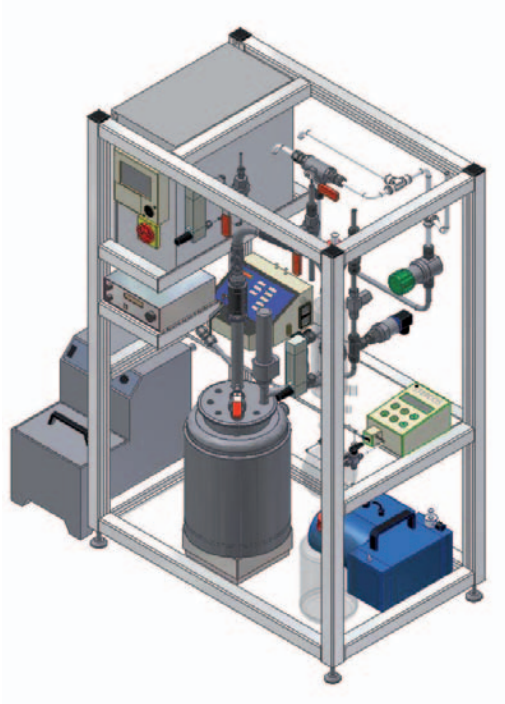
Features

- Multi-purpose-plant for universal use
- Exchangeable vessels in different materials possible
- Thermostat according to process requirements
- Inside and jacket temperature control
- Automatic vacuum control with speed controlled membrane pump
- Pressure control with back pressure regulator
- Feed control with adjustable dosing pump
- Electronic data acquisition
- Data readable with MS-Excel™

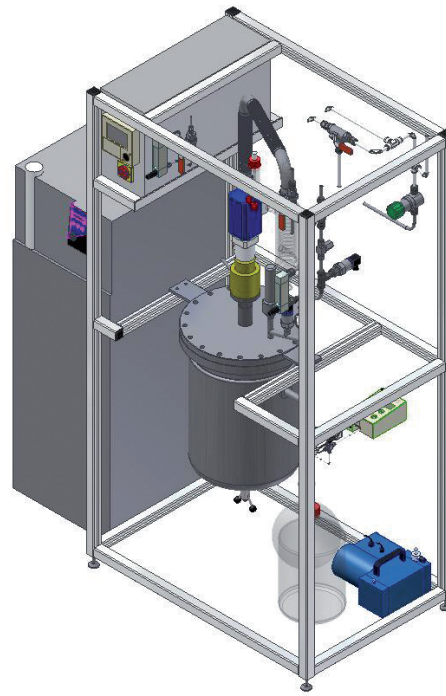
Modular Setup



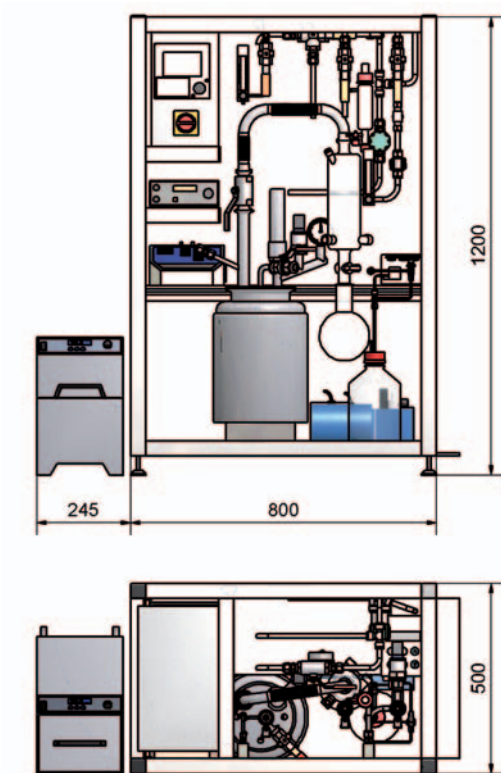
Process and instrumentation diagram with optional modules



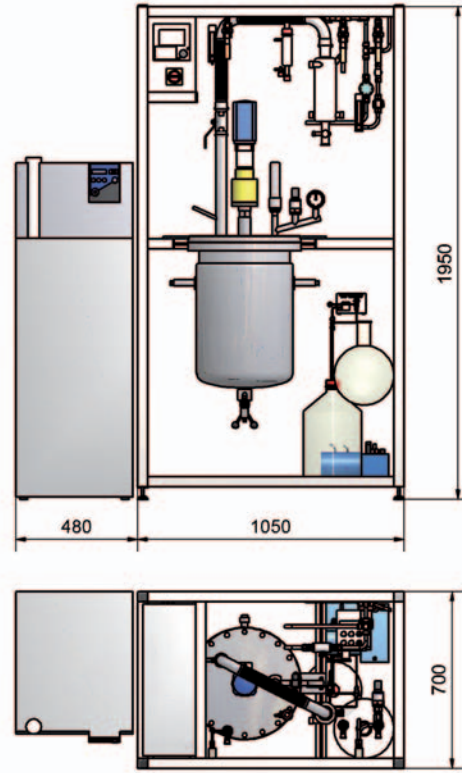
50-l-reactor, stirrer from top



50-l-reactor, stirrer from the bottom



Plant dimensions for 2-, 5- and 10-l-reactor in stainless steel and magnetic stirrer



Plant dimensions for 20-, 30- and 50-l-reactor in stainless steel and magnetic stirrer

Technical Data and Options

<p>01 Basic Data</p> <p>Electrical supply:</p> <p><input checked="" type="checkbox"/> 400 V 50/60 Hz, 16 A</p> <p><input type="checkbox"/> 208 V / 60 Hz, 25 A</p> <p>01.1 <input checked="" type="checkbox"/> Ambient temp. < 40 °C</p> <p>01.2 <input checked="" type="checkbox"/> Max. humidity < 85 %</p> <p>01.3 Reactor volume:</p> <p><input type="checkbox"/> 1 l</p> <p><input type="checkbox"/> 2 l</p> <p><input checked="" type="checkbox"/> 5 l</p> <p><input type="checkbox"/> 10 l</p> <p><input type="checkbox"/> 20 l</p> <p><input type="checkbox"/> 30 l</p> <p><input type="checkbox"/> 50 l</p> <p>01.4 Dimensions:</p> <p><input checked="" type="checkbox"/> Height: 1200 mm (5 l)</p> <p><input type="checkbox"/> Height: 2040 mm (50 l)</p> <p><input type="checkbox"/> Height: 1700 mm (50 l Mag.)</p> <p><input checked="" type="checkbox"/> Width: 800 mm</p> <p><input type="checkbox"/> Width: 1050 mm (50 l)</p> <p><input type="checkbox"/> Width: 900 mm (50 l Mag.)</p> <p><input checked="" type="checkbox"/> Depth: 500 mm</p> <p><input type="checkbox"/> Depth: 700 mm</p> <p>01.5 Control:</p> <p><input checked="" type="checkbox"/> Single controller</p> <p><input type="checkbox"/> Simatic™ CPU 314 with WinCC™ and standard PC</p> <p><input type="checkbox"/> Process control system PCS7 with Simatic™ Box PC</p> <p>01.6 Data acquisition:</p> <p><input checked="" type="checkbox"/> 6-channel recorder</p> <p><input type="checkbox"/> WinCC™ standard</p> <p><input checked="" type="checkbox"/> MS-Excel™ -export</p> <p>01.7 Data interface:</p> <p><input checked="" type="checkbox"/> USB</p> <p><input checked="" type="checkbox"/> Micro Memory Card</p> <p><input type="checkbox"/> Ethernet</p> <p>01.8 <input checked="" type="checkbox"/> Frame, aluminum, open</p> <p><input type="checkbox"/> Frame with acrylic housing</p> <p>01.9 Safety:</p> <p><input checked="" type="checkbox"/> Safety valve</p> <p><input type="checkbox"/> Rupture disk</p> <p><input checked="" type="checkbox"/> Temperature switch</p> <p><input type="checkbox"/> Nitrogen supervision</p> <p><input type="checkbox"/> Ex-sensor</p> <p><input type="checkbox"/> Extraction connection</p> <p>10. Gas Supply</p> <p>10.1 Gas Supply:</p> <p><input checked="" type="checkbox"/> Nitrogen</p> <p><input type="checkbox"/></p>	<p>20 1. Liquid Dosing</p> <p>20.1 Feed tank 1:</p> <p><input checked="" type="checkbox"/> 1 l Glass bottle</p> <p><input type="checkbox"/> l (0,1 to 30 l)</p> <p>20.2 Feed pump 1:</p> <p><input checked="" type="checkbox"/> Membrane pump</p> <p><input type="checkbox"/> Gear pump</p> <p><input type="checkbox"/> HPLC-piston pump</p> <p><input type="checkbox"/> Peristaltic pump</p> <p><input type="checkbox"/> Progressing cavity pump</p> <p><input type="checkbox"/></p> <p>20.3 Flow rate:</p> <p><input checked="" type="checkbox"/> 30 ml/min against 6 bar</p> <p><input type="checkbox"/></p> <p>20.4 Flow control 1:</p> <p><input checked="" type="checkbox"/> Via pump volumetric</p> <p><input type="checkbox"/> Thermal mass flow meter</p> <p><input type="checkbox"/> Coriolis mass flow meter</p> <p><input type="checkbox"/> By gravity / balance</p> <p>21 2. Liquid Dosing</p> <p>21.1 2. Feed:</p> <p><input type="checkbox"/> Configuration as above</p> <p><input type="checkbox"/></p> <p>30 Reactor Unit</p> <p>30.1 Type:</p> <p><input checked="" type="checkbox"/> Jacketed</p> <p><input type="checkbox"/> Without jacket</p> <p>30.2 Reactor material:</p> <p><input checked="" type="checkbox"/> 1.4404</p> <p><input type="checkbox"/> Borosilicate glass</p> <p><input type="checkbox"/></p> <p>30.3 Pressure operation [design]:</p> <p><input checked="" type="checkbox"/> -1 – 5 bar – (-1 - 6 bar)</p> <p><input type="checkbox"/> -1 – 0,2 bar – (-1 – 0,5 bar)</p> <p><input type="checkbox"/></p> <p>30.4 Design temperature:</p> <p><input checked="" type="checkbox"/> -40 to 200 °C</p> <p><input type="checkbox"/> to °C</p> <p>30.5 Stirrer drive:</p> <p><input checked="" type="checkbox"/> Magnetic from bottom</p> <p><input type="checkbox"/> Magnetic from top</p> <p><input type="checkbox"/> Mechanical from top</p> <p>30.6 Emptying:</p> <p><input checked="" type="checkbox"/> By tube from top</p> <p><input type="checkbox"/> By bottom valve</p> <p>30.7 Temperature control:</p> <p><input checked="" type="checkbox"/> Setpoint oil</p> <p><input checked="" type="checkbox"/> Setpoint reactor</p> <p><input type="checkbox"/></p>	<p>30.8 Temperature measurement:</p> <p><input type="checkbox"/> Thermocouple type K</p> <p><input checked="" type="checkbox"/> RTD Pt100 (max. 600 °C)</p> <p>30.9 Sensor arrangement:</p> <p><input checked="" type="checkbox"/> Double sensor in protection tube used as a baffle</p> <p><input type="checkbox"/></p> <p>30.10 Thermostat:</p> <p><input type="checkbox"/> 30 – 300 °C</p> <p><input type="checkbox"/> -20 – 150 °C</p> <p><input checked="" type="checkbox"/> -33 – 200 °C</p> <p><input type="checkbox"/> -40 – 250 °C</p> <p><input type="checkbox"/></p> <p>30.11 Power for cooling/heating:</p> <p><input checked="" type="checkbox"/> 2 kW, 0,3 kW</p> <p><input type="checkbox"/> 12 kW, 5 kW</p> <p><input type="checkbox"/></p> <p>30.12 Stirrer type / speed:</p> <p><input checked="" type="checkbox"/> PTFE, propeller, 1000 UPM</p> <p><input type="checkbox"/> Anchor stirrer, 200 RPM</p> <p><input type="checkbox"/></p> <p>30.13 Pressure measurement:</p> <p><input checked="" type="checkbox"/> Polycrystalline silicon, 6 bar</p> <p><input type="checkbox"/></p> <p>40 Pressure control:</p> <p><input checked="" type="checkbox"/> Back pressure regulator</p> <p><input type="checkbox"/> Control valve, electric</p> <p><input type="checkbox"/> Control valve, pneumatic</p> <p>50 Condenser</p> <p>50.1 Condenser type:</p> <p><input type="checkbox"/> Jacketed tube</p> <p><input checked="" type="checkbox"/> Spiral tube type condenser</p> <p><input type="checkbox"/></p> <p><input type="checkbox"/> Without condenser</p> <p>50.2 Cooling water control:</p> <p><input checked="" type="checkbox"/> Variable area flowmeter</p> <p><input type="checkbox"/> With external cooler</p> <p><input type="checkbox"/> No control</p> <p>60 Vacuum</p> <p>60.1 Vacuum pump:</p> <p><input type="checkbox"/> Without</p> <p><input type="checkbox"/> 70 mbar</p> <p><input checked="" type="checkbox"/> 10 mbar</p> <p>70 Distillate</p> <p>70.1 Collector volume:</p> <p><input checked="" type="checkbox"/> 1 l round flask</p> <p><input type="checkbox"/> 2 l round flask</p> <p><input type="checkbox"/> l</p>
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Technical changes reserved at any time. Standard Option

Smart Solutions for Small Plants

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