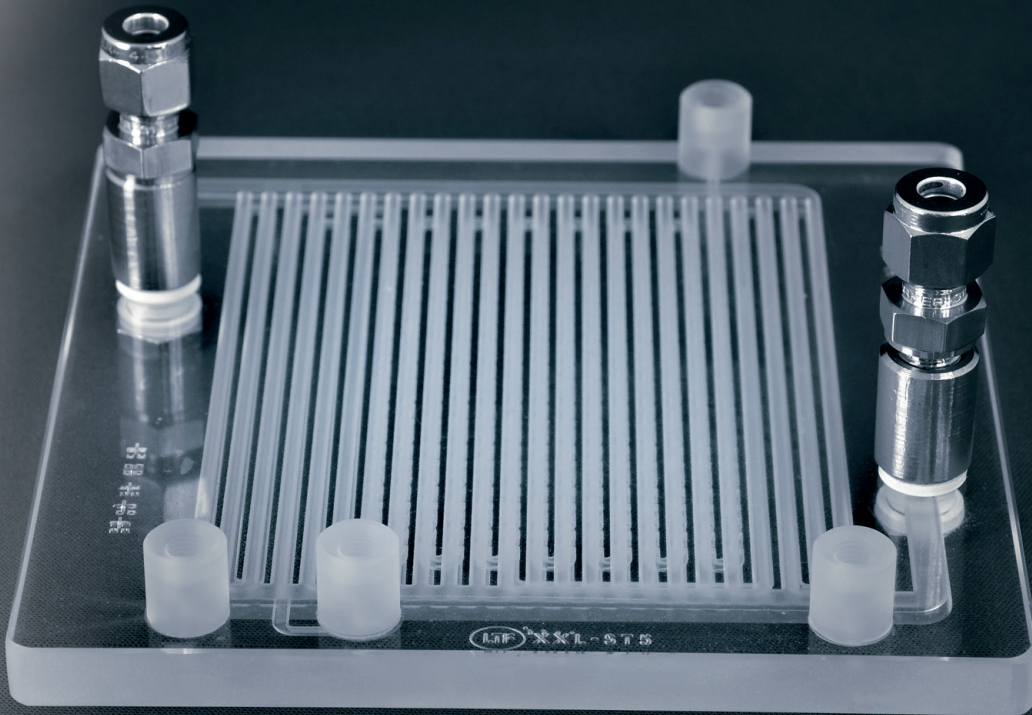


■ XXL SERIES

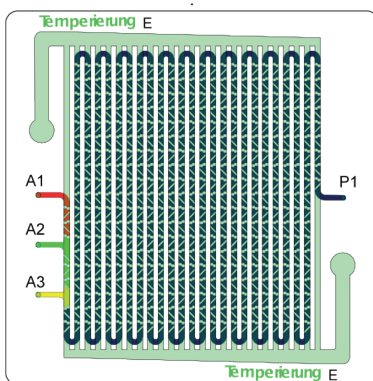
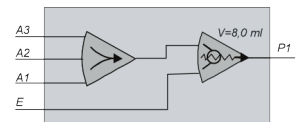


The XXL series manufactured by the Little Things Factory permits the large-scale implementation of the results of laboratory research. Different types are available which all share a compact construction design. The reactors with integrated heat exchangers are connected via glass internal screws or hollow screws with clamping ring connection for the thermostat. The reactors of the XXL series manufactured by the Little Things Factory are made of borosilicate glass.

- From batch to continuous process
- Integrated tempering layers
- Pressure tested @15 bar (218 psi)
- Connecting via 1/4" UNF 28 fittings and 1/4" swage-lok
- Easy to use
- Space savings

XXL-ST-01

The XXL reactor ST-01 is characterised by its compact construction design and robustness. It consists of three function levels: Adjust temperature - Mix - Adjust temperature. Three reagents (A1, A2, A3) are mixed without preliminary temperature regulation in a 3m long, temperature-adjusted mixing line of the type ST transferred to output P1 without time delay.

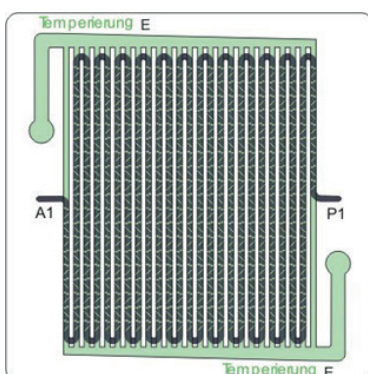
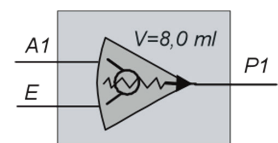


PARAMETERS

Geometry	150 mm * 150 mm * 14 mm
Function levels	Outside level: Temperature regulation, Inner level: Mixing and holding line
Reagents	3
Mixer base	Type ST, Cross-section: 2.2 mm * 2.2 mm, Volume Mixing and holding line: 8.0 ml, Length 3000 mm
Pressure area	Mixer line 15 bar

XXL-ST-02

The XXL reactor ST-02 is designed as a holding area for temperature regulation. In order to counteract a possible exsolution of heterogenous mixtures, the holding area is equipped with mixing elements of the type ST. It consists of the function levels Adjust temperature - time delay - Adjust temperature.

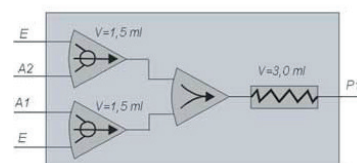


PARAMETERS

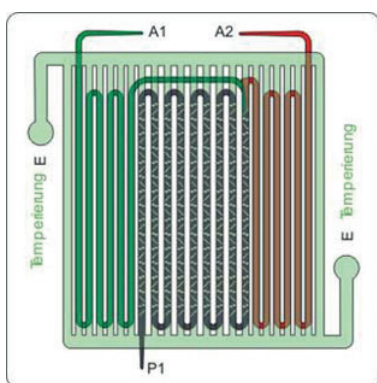
Geometry	150 mm * 150 mm * 14 mm
Function levels	Outside level: Adjust temperature, Inner level: Mixing and holding line
Reagents	1
Mixer base	Type ST, Cross-section: 2.2 mm * 2.2 mm, Volume Mixing and holding line: 8.0 ml, Length 3000 mm
Pressure area	Mixer line 15 bar

XXL-ST-03

This fully temperature-adjusted microreactor permits the warming or cooling of the reagents to the reaction temperature before they are mixed into a single component. The mixing line consists of a micromixer of the type ST. The length of the mixing line totals 2000 mm (3ml inner volume). This makes this reactor especially suitable for heterogenous reactions. Furthermore, exsolution is prevented in the holding line which is extended to function as a micromixer.



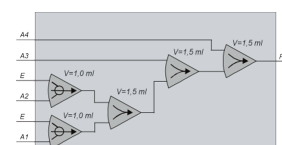
PARAMETERS



Geometry	150 mm * 150 mm * 14 mm
Function levels	Outside level: Adjust temperature, Inner level: Pre-heating line, mixing and holding line
Reagents	2
Pressure area	Mixer line 15 bar

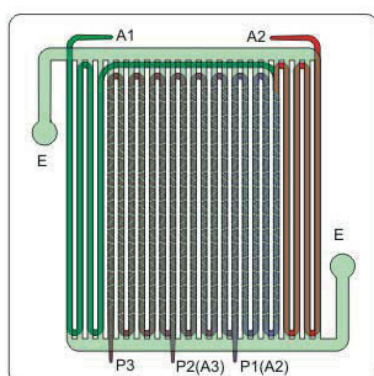
XXL-ST-04

With the XXL reactor ST-04 two reagents (A1, A2) can be temperature-adjusted and then mixed in a type ST mixer with a controlled reaction temperature. The product can be removed at three different outlets (P3, P2, P1) and so various delay times can be realised with the same flow rate. The outlets can also be used as inputs for additional reagents. It consists of three function levels: Adjust temperature - Pre-heat/mix - Adjust temperature.



application of the connectors A1 and A2 as prewarm inlets and A3 and A4 as additional inlets.

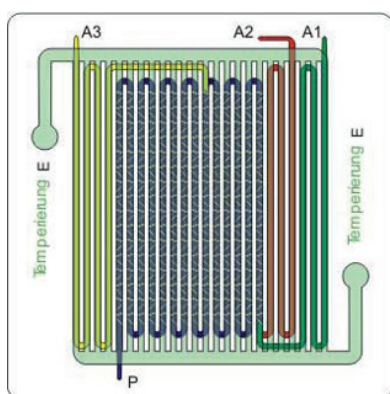
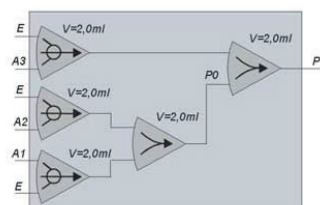
PARAMETERS



Function levels	Temperature regulation, Pre-heating line, Mixing and holding line
Reagents	2-4
Mixer base	Type ST, Cross-section: 2.2 mm * 2.2 mm, Volume Mixer with holding line: 8.0 ml, Length 3000 mm
Pressure area	Temperature regulation: Permissible pressure 7 bar, Flow rate water at 6 bar 5 - 8 l/h Reaction line: Permissible pressure: 7 bar; Flow rate water at 6 bar: 70 ml/min

XXL-ST-05

With the XXL reactor ST-05 three reagents (A1, A2, A3) can be temperature-adjusted and mixed in a type ST mixer with a controlled reaction temperature. First reagent A1 and reagent A2 are mixed before reagent A3 is added. It consists of three function levels: Adjust temperature - Pre-heat/mix - Adjust temperature.

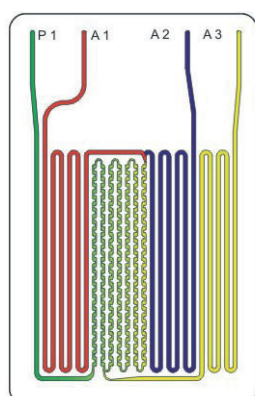
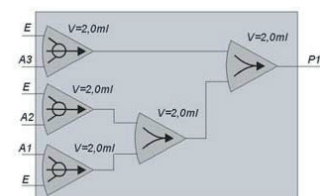


PARAMETERS

Geometry	150 mm * 150 mm * 14 mm
Function levels	Outside level: Temperature regulation, Inner level: Mixing and holding line
Reagents	3
Mixer base	Type ST, Cross-section: 2.2 mm * 2.2 mm, Volume Mixer with holding line: 8.0 ml, Length 3000 mm
Pressure area	Mixer line 15 bar

XXL-S-01

The microreactor consists of a pre-heating line for two reagents, a mixer and a holding line for the mixed product. The mixing elements are very simply structured by means of „chicanes“ (Design element „Type S“), which makes them especially suitable for use with precipitation reactions and suspensions. In this reactor the temperature is adjusted by means of an external thermostat by a simple „immersion“ of the reactor. This avoids losses in the supply lines and more extreme temperatures can be achieved.

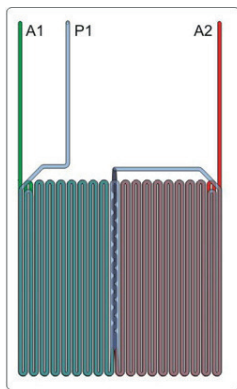
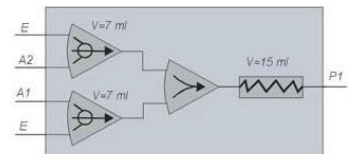


PARAMETERS

Geometry	190 mm * 120 mm * 6,6 mm
Function levels	Outer level: Temperature regulation, Inner level: Pre-heating line, Mixing and holding line
Reagents	3
Mixer base	Type „chicane“, Cross-section: 2.2 mm * 2.2 mm, Volume Mixer with holding line: 15.0 ml, Length 2000 mm
Pressure area	Mixer line 15 bar

XXL-S-02

The microreactor consists of a pre-heating line for two reagents, a mixer and a holding line for the mixed product. The mixing elements are very simply structured by means of „chicanes“ (Design element „Type S“), which makes them especially suitable for use with precipitation reactions and suspensions. In this reactor the temperature is adjusted by means of an external thermostat by a simple „immersion“ of the reactor. This avoids losses in the supply lines and more extreme temperatures can be achieved.

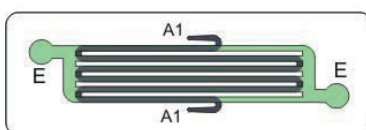
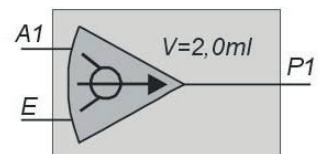


PARAMETERS

Geometry	180 mm * 130 mm * 6,4 mm
Function levels	Outer level: Temperature regulation, Inner level: Pre-heating line, Mixing and holding line
Reagents	2
Mixer base	Type „chicane“, Cross-section: 2.2 mm * 2.2 mm, Volume Mixer with holding line: 15.0 ml, Length 2000 mm
Pressure area	Mixer line 15 bar

XXL-KOE-01

The XXL reactor KOE-01 is intended as a temperature-adjusted holding line, but it can also be used as a temperature-adjusted link between 2 different XXL reactors. It consists of the function levels Temperature regulation - holding - temperature regulation.

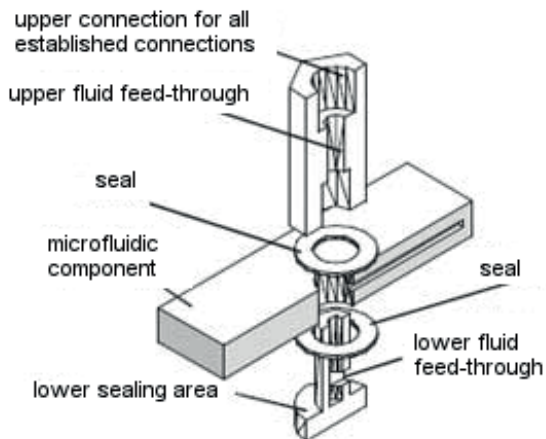


PARAMETERS

Geometry	150 mm * 50 mm * 9 mm
Function levels	Outer level: Temperature regulation, Inner level: Mixing and holding line
Reagents	1
Mixer base	Type ST, Cross-section: 2.2 mm * 2.2 mm, Volume Mixer with holding line: 8.0 ml, Length 3000 mm
Pressure area	Mixer line 15 bar

■ CONNECTIONS

STAINLESS STEEL HOLLOW SCREW



Sizes:	1/6 - 1/2 inch compression fitting and also PTFE
Material	stainless steel 316
Thread	M5, 1/8", 1/4" and others upon request

NUT BONDED ON 1/4 INCH UNF OR ONLY PREPARED



Sizes:	1/4"
Connection	bonded on
Material	BF33
Thread	1/4" UNF 28 Gang