IKA

designed for scientists

EN

OPTIMIZING CHEMICAL PROCESSES | EasySyn Reactor Systems

EasySyn

/// The reactor system for chemical synthesis

We are expanding the portfolio of IKA reactor systems: EasySyn is optimized for organic and aqueous syntheses. The controllable and reproducible reaction conditions make EasySyn ideal for applications in research and development, the chemical industry or materials research.

In the pre-production stage, EasySyn offers a wide range of applications: reflux condensations, reactions under vacuum, crystallizations, (pH-controlled) precipitation reactions, nanoparticle or catalyst syntheses, and the transfer from laboratory to process scale.

Individual application support

In the IKA Application Center, you can see the capabilities of our reactor systems for yourself. Our experts will show you the application and demonstrate the extended accessories.

One service for everything, worldwide

Your decision for EasySyn from IKA is also a decision for a single contact partner for all reactor components. All components, from the overhead stirrers to the vessels to the temperature control system, are made by us. This means you always benefit from IKA's excellent technical service in your region. IKA guarantees the availability of spare parts for your laboratory device for up to 10 years.

Do you have any questions?
Our service team is at your personal disposal:

+49 7633 831 862

2+1 years warranty*

CE

* 2+1 years after registering at www.ika.com/register, wearing parts and glassware excluded.

Everything from a single source

/// One reactor system, all from IKA

EasySyn is the reactor system for organic or aqueous synthesis. And the only reactor system for which you can get all the complementary components from a single source: Stirrers, circulators, vacuum pumps and controllers, sensors and automation software. All from IKA and all perfectly matched to each other.

With its double-walled reactor vessels from 100 ml to 5000 ml, EasySyn is a medium-sized and very flexible upscaling system. It ensures safe and reproducible chemical reactions.

4
/// OVERVIEW

6
/// KEY COMPONENTS

10
/// MORE FEATURES

11
/// ACCESSORIES

14
/// PACKAGES

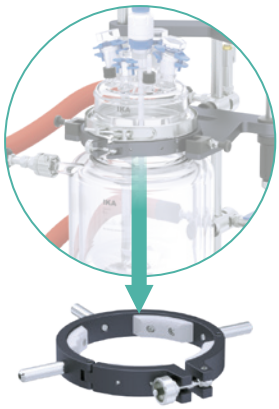
15
/// TECHNICAL DATA

For the best reactions

One stand for all vessels

EasySyn has a stand that fits all vessel sizes. It is ergonomically designed. This means that the reactor vessels can be adjusted in height without tools. Draining the reaction liquid is easy, changing vessels is quick and the stirrer can be aligned in three dimensions.

This stand supports you through the entire upscaling process. You have a comfortable working posture at all times, and the various operations go off the hook more quickly.



Easy to use

EasySyn ensures safe handling of the stirring tool at all times. Our specially developed vessel clamps enable tool-free and simple attachment of the vessels.

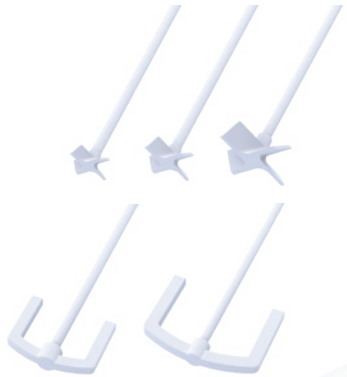
You can assemble and reassemble EasySyn very quickly. In addition, the straight design guarantees a long service life.

100 – 5000 milliliter volume

Thought-out reactor vessels

These reactor vessels have what it takes. They are available with 100, 250, 500, 1000, 2000 and 5000 milliliter volumes and with or without a bottom drain valve. The spring-loaded valve spindle prevents stresses in the glass and thus glass breakage. All vessels are made of borosilicate glass 3.3, which means they are chemically resistant.

EasySyn allows you to run completely different batch sizes. You work securely and save costs. The bottom valve ensures complete draining of the reaction solution and avoids dead volumes.



Powerful stirrers

Suitable for EasySyn, our overhead stirrers are available with torques of 60 or 100 Ncm. You can choose from various stirring tools adapted to the reactor vessel, all of which are PTFE-coated. And if you choose a control unit, you can remotely control the stirring parameters thanks to the removable Wireless Controller and use many additional functions.

Your application will certainly succeed thanks to powerful mixing. You can automate numerous work steps and, for example, control them remotely from outside a fume hood.

Large operating range

EasySyn is capable of operating at temperatures between -60 °C and 230 °C. The reactor system handles liquids up to about 30 000 mPas and vacuum applications up to 3 mbar.

EasySyn offers you a wide range of applications. It is optimized for media with low viscosity, but is very flexible in everyday use.

Complete compatibility

Our reactor lids are normed. The additional openings for sensors or glass devices are also compatible with available equipment.

EasySyn is flexible and compatible with your existing equipment.

Key components

Overhead stirrers

In combination with EasySyn, you use our proven EUROSTAR overhead stirrers. You have the choice between three device classes and strengths: There is our classic EUROSTAR 60 digital stirrer, the fully automatable EUROSTAR 60 control or the extra strong EUROSTAR 100 control.

All three device variants are universal and robust overhead stirrers. In the 100 control variant, EUROSTAR achieves an extremely high torque of up to 100 Ncm. This makes it particularly popular for applications in laboratory reactors.

Overhead stirrers	EUROSTAR 60 digital Ident No.: 0020105156	EUROSTAR 60 control Ident No.: 0020105158	EUROSTAR 100 control Ident No.: 0020105159
Torque max. at the stirring shaft	100 Ncm	100 Ncm	200 Ncm
RS 232 / USB interface	Yes	Yes	Yes
Programmable functions	–	Yes	Yes
Reversible direction of rotation	–	Yes	Yes
Precise torque measurement	±6 Ncm	±1 Ncm	±1 Ncm

Stirring tools

You can clamp our PTFE-coated propeller stirrers or anchor stirrers into the overhead stirrer of your choice. They are available in different sizes – matching the chosen glass vessel.

> STIRRING ELEMENTS, AXIAL FLOW

Propeller stirrer	R 4011 SY Ident No.: 0020114111	R 4012 SY Ident No.: 0020114112	R 4013 SY Ident No.: 0020114113
Stirrer diameter	40 mm	50 mm	75 mm
Shaft length	400 mm	480 mm	530 mm
Suitable vessel size	100 / 250 / 500 / 1000 ml	1000 / 2000 ml	5000 ml

> STIRRING ELEMENTS, TANGENTIAL FLOW

Anchor stirrer	R 4021 SY Ident No.: 0020114114	R 4022 SY Ident No.: 0020114115
Stirrer diameter	89 mm	136 mm
Shaft length	410 mm	530 mm
Suitable vessel size	500 / 1000 ml	2000 / 5000 ml

Reactor vessels

In total, you have twelve different reactor vessels to choose from. There are six volumes: 100, 250, 500, 1000, 2000 and 5000 ml. Each size is optionally available with or without a bottom drain valve. As the vessels are made of borosilicate glass 3.3, EasySyn is also suitable for syntheses with aggressive media such as acids or bases.

If you decide to use the drain valve, simply release the complete reaction solution from the bottom without leaving any residue. This makes it easier to clean the vessels later. The spring loaded valve spindle is standard on all our reactor vessels to prevent stresses in the glass and glass breakage.

> REACTOR VESSELS

100 milliliter volume

250 milliliter volume

500 milliliter volume

1000 milliliter volume

Reactor vessels	SY 100 | SY 100 D Ident No.: 0020126922 Ident No.: 0020126921	SY 250 | SY 250 D Ident No.: 0020126923 Ident No.: 0020126920	SY 500 | SY 500 D Ident No.: 0020113459 Ident No.: 0020113460
Volume	100 ml	250 ml	500 ml
Bottom drain valve	no | yes	no | yes	no | yes
Flange size	DN 100	DN 100	DN 100
Min. operating temperature	-60 °C | -50 °C	-60 °C | -50 °C	-60 °C | -50 °C
Max. operating temperature	230 °C | 200 °C	230 °C | 200 °C	230 °C | 200 °C

2000 milliliter volume

Reactor vessels	SY 1000 | SY 1000 D Ident No.: 0020113461 Ident No.: 0020113462	SY 2000 | SY 2000 D Ident No.: 0020113463 Ident No.: 0020113464	SY 5000 | SY 5000 D Ident No.: 0020113465 Ident No.: 0020113466
Volume	1000 ml	2000 ml	5000 ml
Bottom drain valve	no | yes	no | yes	no | yes
Flange size	DN 100	DN 150	DN 150
Min. operating temperature	-60 °C | -50 °C	-60 °C | -50 °C	-60 °C | -50 °C
Max. operating temperature	230 °C | 200 °C	230 °C | 200 °C	230 °C | 200 °C

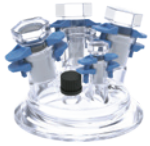
5000 milliliter volume

Reactor lids

You can select from four different reactor lids. The stirring tool is inserted in here and temperature or pH sensors can be connected easily. The shape and ground joints of the reactor lids are standardized and accordingly compatible with everything you already have.

> REACTOR LIDS

SY 100.1



SY 100.2

SY 150.1

SY 150.2

Reactor lids	SY 100.1 Ident No.: 0020113649	SY 150.1 Ident No.: 0020113660	SY 150.1 Ident No.: 0020113660	SY 150.2 Ident No.: 0020113661
Openings	1 × center NS 29/32, 2 × NS 29/32, 1 × NS 14/23	1 × center NS 29/32, 3 × NS 29/32, 1 × NS 14/23, 2 × GL 18	1 × center NS 29/32, 2 × NS 29/32, 1 × NS 14/23	1 × center NS 29/32, 3 × NS 29/32, 1 × NS 14/23, 2 × GL 18
Flange size	DN 100	DN 100	DN 150	DN 150
Suitable vessel size	100 / 250 / 500 / 1000 ml	100 / 250 / 500 / 1000 ml	2000 / 5000 ml	2000 / 5000 ml

Even more features

Flexible tempering hoses

Our tempering hoses are particularly flexible. This means they ideally nestle around the reactor without tension. This avoids stresses on the glass vessel and thus glass breakage. You will work safer and more cost-effectively.

Clever valves

In order to drain the temperature fluid completely and cleanly from the double-walled vessel and the tempering hoses, we have developed special valves that are attached to the stand.

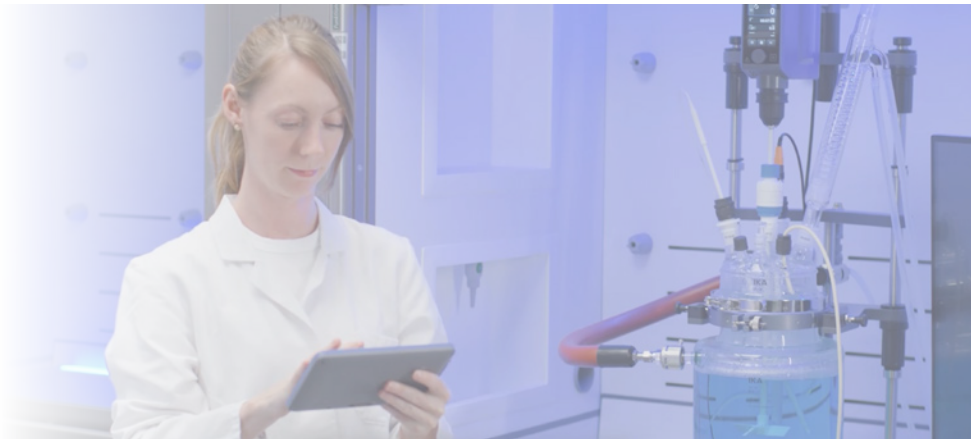
Stirrer in three dimensions

Thanks to the stand design, our stirrer can be moved in three dimensions. This means that the reactor lid is always easily accessible. You can fill or remove your substances effortlessly. This safe alignment also ensures a long service life of the stirrer guide.

Easy cleaning

A clear design and completely emptied vessels relieve your staff of time-consuming cleaning tasks in everyday laboratory work and at the same time ensure safe working.

IKA HUB
Ident. No.: 0020123598



Perfect complements

Automation with labworldsoft® 6

Automate, control, monitor: With our labworldsoft® 6 laboratory software, you operate your entire reactor system from your PC. You define dependencies, automate routine tasks and define measured value recordings or real-time calculations.

In remote operation, you control sophisticated reactions from a safe distance. Several options for recipe and process automation ensure greater process reliability, more user safety and higher reproducibility of all processes.

labworldsoft® 6 Reactor
Ident No.: 0020117504

› For all device configurations
› More than 700 devices from device library
› Control any number of devices simultaneously
› For laboratory devices of all manufacturers
› 1 year support with new versions of labworldsoft® 6 Reactor

labworldsoft® 6 Pro
Ident No.: 0020017366

› For all device configurations
› More than 700 devices from device library
› Control any number of devices simultaneously
› For laboratory devices of all manufacturers
› 1 year support with new versions of labworldsoft® 6 Pro
› Supports the Labworldsoft server
› Supports FDA 21 CFR Part 11 requirements

Temperature control

Circulators	HBC 5 control Ident No.: 0004127000	HRC 2 GREEN control Ident No.: 0020128746	CBC 5 control Ident No.: 0004167000
Operating temperature	RT +10 K – 250 °C	-30 – 100 °C	-25 – 200 °C
Application	Heating / cooling (with external cooling)	Heating / cooling	Heating / cooling
Heating capacity	2500 W	1500 W	2500 W
Cooling capacity (@20 °C)	–	620 W	350 W

Vacuum pumps

Vacuum pump	VACSTAR lite Ident No.: 0020124926	VACSTAR digital Ident No.: 0020016236	VACSTAR control Ident No.: 0020109375
Max. pump rate	16.67 l/min	22 l/min	22 l/min
Final pressure	9 mbar	2 mbar	2 mbar
Speed control	0/285 – 1100 rpm	0/285 – 1200 rpm	0/285 – 1200 rpm
Adjustable vacuum value	Requires external control / valve	Requires external control / valve	Integrated controller

VC 10 lite | VC 10 pro

Ident No.: 0020111998 | 0020112031

Universal vacuum controller with on/off regulation for calibration of multiple vacuum sources. In addition to the manual mode, up to ten programs can be saved, with up to ten pressure/time sequences.

Cleaning function of valves for long service life

Other accessories

PT 100.300 | PT 100.500
PTFE-coated temperature sensor.
Length: 300 mm | 500 mm
Suitable reactor vessels:
100 – 1000 ml | 2000 – 5000 ml
Ident No.: 0020114304
Ident No.: 0020114305

SY pH 325 | SY pH 425
pH electrode
Length: 325 mm | 425 mm
Suitable reactor vessels:
100 – 1000 ml | 2000 – 5000 ml
Ident No.: 0020114414
Ident No.: 0020114415

SY SP 500 | 1000 | 2000 | 5000
Inlet tube for introducing gases into the reaction solution.
Ident No.: 0020129798
Ident No.: 0020129799
Ident No.: 0020129800
Ident No.: 0020129801

SY OB 14 | 29
Bubble counter for working under inert conditions and to prevent overpressure.
Ident No.: 0020129851
Ident No.: 0020129852

LT 5.40
Draining set
By using the draining set, easy and clean draining of the temperature fluid is made possible.
Ident No.: 0020113266

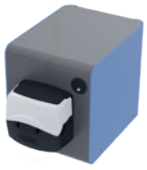
SY NS.6 | 8 | 12
Swivel screw fitting
Diameter: 6 mm | 8 mm | 12 mm
Adapter to mount temperature sensors (SY NS.8) or pH electrodes (SY NS.12).
Ident No.: 0020113165
Ident No.: 0020113164
Ident No.: 0020113163

LT 5.30 | 31 | 32
Tempering hose, 2 pcs.
Length: 800 | 1200 | 1600 mm
Temperature range: -60 – 300 °C
Pressure resistance: 3 bar
Ident No.: 0020108012
Ident No.: 0020110278
Ident No.: 0020113271

H.FKM.12
Hose set DN 12, 2 pcs.
Length: 1500 mm
Temperature range: -30 – 180 °C
Pressure resistance: 1 bar
Ident No.: 0004569300

SY C1
Reflux condenser with NS 29/32 core.
Ø Olives: 11 mm
Ident No.: 0020113927

ALMEMO 2490
pH measuring device
Ident No.: 0004709300



HA.ep
Dosing pump for precise liquid dosing using labworldsoft®
Ident No.: 0020101836

Further accessories can be found at www.ika.com

Your laboratory, our package

We have prepared a Starter and an Advanced Package for you. The main difference lies in the stirrer used. EasySyn Starter contains the EUROSTAR 60 digital, the Advanced Packages the EUROSTAR 100 control. It enables additional functions such as external control via labworldsoft® 6 (RS 232 or USB interface), operation via detachable remote control and programming of a timer, for example.

The Advanced Systems also include the LT 5.40 draining set, which enables the temperature fluid of the double jacket to be drained easily and cleanly by using special valves. This saves valuable time when replacing the reactor vessels.

The Advanced System is therefore particularly suitable for applications in which the reactor vessel has to be replaced or cleaned regularly.

EasySyn Starter	EasySyn Advanced
Stand system	
Double-walled reaction vessel with bottom outlet. (Sizes: 500, 1000, 2000 or 5000 ml)	
Propeller stirrer incl. stirrer guide	
Required clamps for vessel mounting & lid attachment	
Reactor lid with 3 openings 2 × NS 29/32, 1 × NS 14/23	Reactor lid with 6 openings 3 × NS 29/32, 1 × NS 14/23, 2 × GL 18
Overhead Stirrer EUROSTAR 60 digital	Overhead Stirrer EUROSTAR 100 control
	Draining set LT 5.40
(1) EasySyn 500 Starter Ident No.: 0010016813	EasySyn 500 Advanced Ident No.: 0010016809
EasySyn 1000 Starter Ident No.: 0010016815	(2) EasySyn 1000 Advanced Ident No.: 0010016810
(3) EasySyn 2000 Starter Ident No.: 0010016816	EasySyn 2000 Advanced Ident No.: 0010016811
EasySyn 5000 Starter Ident No.: 0010016817	(4) EasySyn 5000 Advanced Ident No.: 0010016812

(1)

(2)

(3)

(4)

Technical data

TECHNICAL DATA	EasySyn Starter	EasySyn Advanced
Useful volume max.	500 ml, 1000 ml, 2000 ml, 5000 ml	
Operating temperature	-50 – 200 °C	
Attainable vacuum	3 mbar	
Reactor lid	Reactor lid with 3 openings 2 × NS 29/32, 1 × NS 14/23	Reactor lid with 6 openings 3 × NS 29/32, 1 × NS 14/23, 2 × GL 18
Draining set LT 5.40	–	inclusive
Overhead stirrer	EUROSTAR 60 digital	EUROSTAR 100 control
Torque max. at the stirrer shaft	100 Ncm	200 Ncm
Timer	–	Yes
RS 232 & USB interface	Yes	Yes
Ethernet, WIFI, WPAN	–	Yes
Reversible direction of rotation	–	Yes
Torque display	–	Yes
Viscosity measurement	–	Yes
Programmable functions	–	Yes
Stand dimensions (W × H × D)	500 × 950 × 580 mm	

Would you like your own desired configuration? Or an individual offer?

With our online configurator, you can put together a reactor system that is individually tailored to your needs.

Click here to view the configurator:

www.ika.com/easysyn-config

You can choose between different reactor vessels, overhead stirrers, stirring tools, circulators and automation levels.

EasySyn configurator

IKA

designed for scientists

Everything for your Lab

IKA is your reliable partner in laboratory, analysis and process technology. When it comes to applications in the areas of stirring, mixing, tempering, distilling or grinding, market leaders rely on our proven products and technology. We are continually working to further develop our portfolio according to the needs of our customers. Building on this, we network our products and services to create holistic, application-oriented solutions and enable our customers to achieve the best possible results and step into the digital age.

BIOREACTORS

MIXING

HEATING / COOLING / TEMPERING

LIQUID HANDLING

MEASURING VISCOSITY

VACUUM TECHNOLOGY

CRUSHING

DIGITAL LAB SERVICES

SEPARATION

ELECTROCHEMISTRY

REACTOR SYSTEMS

CALORIMETRY

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Information on delivery not binding