IKA®

Magnetic Stirrers

designed
for scientists

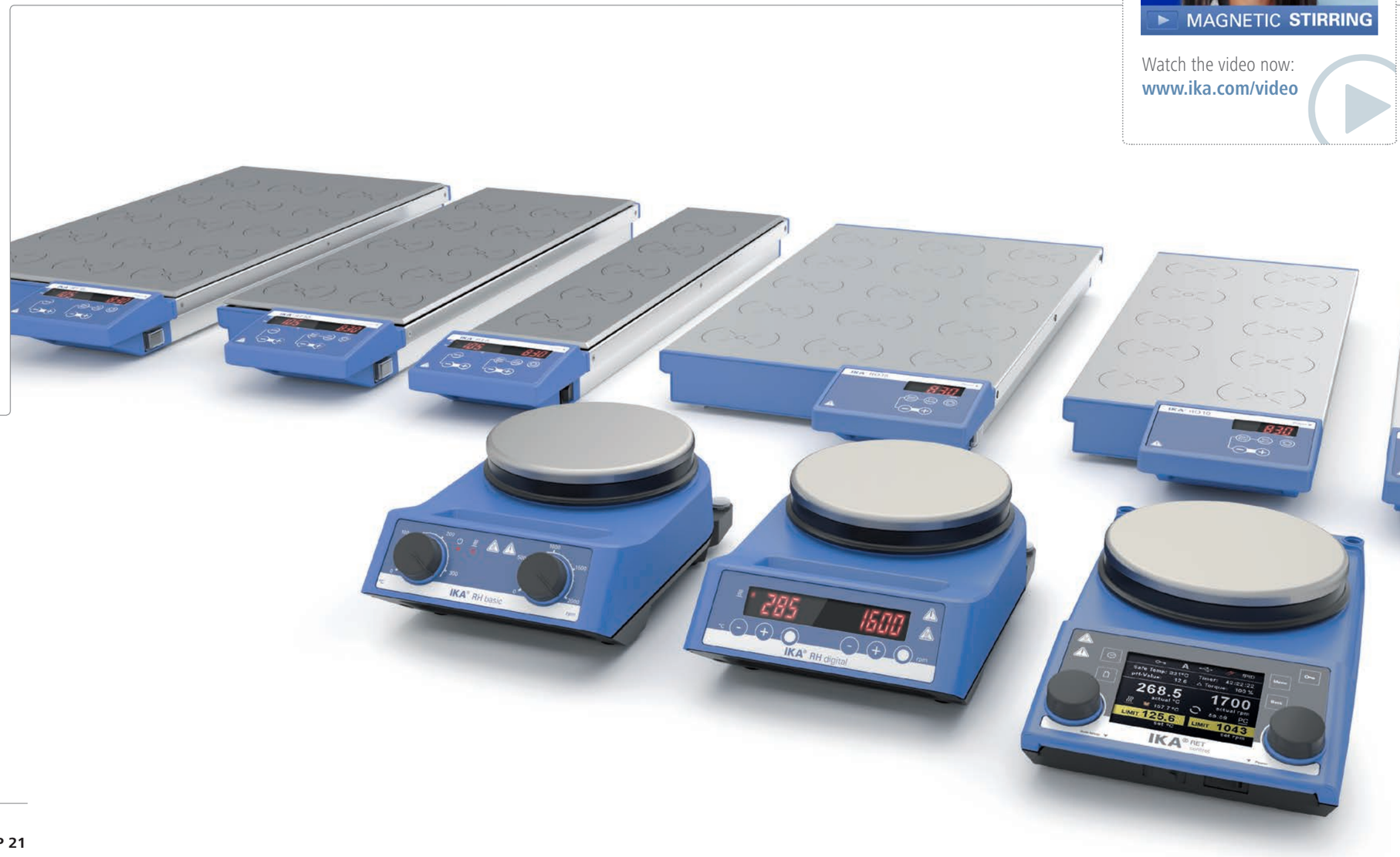
Stirring technology redefined!

Watch the video now:
www.ika.com/video

IKA® offers an extensive magnetic stirrer portfolio worldwide.

The new generation of magnetic stirrers offers many unique features, such as an innovative RET® control-visc with patented integrated weighing function. In addition, the RET® control-visc is equipped with an USB interface to reproduce and document trials at any time.

Furthermore, the new and advanced multi-position magnetic stirrers are now equipped with digital displays and wear free magnetic coil technology. The newly designed, unbelievably affordable magnetic stirrers are now available with enhanced features to ensure better performance and exceptional heating solutions.



3 Year warranty*

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

Protection class according to DIN EN 60529: Min. IP 21

CE | c UL US LISTED

Magnetic stirrers without heating

Mini MR standard

> For stirring quantities of 1000 ml (H_2O)
> Infinitely variable speed from 0 – 2500 rpm
> White set-up plate suitable for observing color reactions

topolino

> Durable brushless motor
> Continuously adjustable speed range
> High magnetic adhesion

IKA® +

topolino mobil:

> Extremely light-weight and ultra-mobile with the possibility to operate outside the laboratory
> Operated mains-free with standard batteries

topolino mobil

> Short charging time (2 – 3 h)
> Portable unit with long operating time (8 – 12 h)

big squid

> For maximum stirring quantity of 1.5 l (H_2O)
> Digital display for precise speed setting
> Electronically controlled motor for more capacity
> Higher speed range from 0 – 2500 rpm
> Glass plate for excellent resistance to acids, bases and solvents

color squid

> For maximum stirring quantity of 1 l (H_2O)
> Available in various interesting motives

lab disc

> Ultra-flat for stirring quantities of up to 800 ml (H_2O)
> Modern wear-free magnetic coil technology
> Automatic reverse rotation every 30 seconds for better mixing results
> Set-up plate and casing made of chemically resistant materials
> Slip-proof and safe stand

C-MAG MS 4 | 7 | 10

> Ceramic plate offers excellent chemical resistance to acid, bases and solvents
> Powerful motor for stirring quantities up to 15 l (H_2O)
> Elevated control panel for protection against spilled liquids
> Available in 3 different sizes: 4", 7" and 10"

KMO 2 basic

> Small, powerful magnetic stirrer for stirring quantities up to 5 l (H_2O)
> Motor with optoelectronic speed control
> Infinitely variable speed from 0 – 1100 rpm
> Stainless steel casing facilitates cleaning and sterilization

Maxi MR 1 digital

> For stirring quantities up to 150 l (H_2O)
> Flat, sturdy stainless steel casing
> Non-locking motor
> Infinitely adjustable speed with digital display
> Timer (0 – 56 min) or continuous operation

Midi MR 1 digital

> For stirring quantities up to 50 l (H_2O)

RET® control-visc | **Safety. Power. Intelligence.**

The RET® control-visc is the safest, strongest and most intelligent magnetic stirrer in its class.

The RET® control-visc is a magnetic stirrer whose remarkable technical functions have been developed for demanding applications. The unit mainly focuses on three core competences:
1. Safety, 2. Power, 3. Intelligence.

This is realized by
> using high performance electronic components,
> intelligent heating technology,
> a motor designed specifically for a variety of applications (including high-viscous fluids) and
> high quality standards applied during the production process.

Insulated composite heating plate

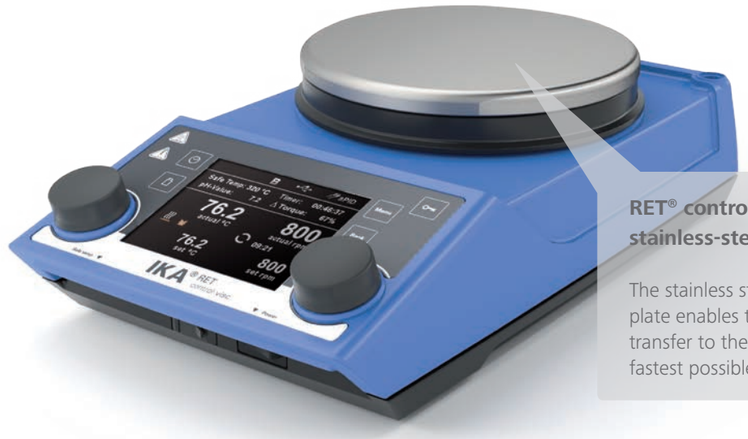
With the unique structure of the composite heating plate, the RET® control-visc minimizes the loss through eddy currents when heating and stirring. The integrated high-tech insulation optimizes the heat transfer into the medium by minimizing thermal losses. The built-in heating foil ensures an even temperature allocation on the heating plate.

Sealed **Sealed housing** to protect motor and display

5 kg **An integrated and patented weighing function** allows the user to measure weight changes of up to 5,000 g

Ncm % **Torque trend measurement** Viscosity changes in the medium can be measured by using a torque measurement device. The results can be depicted on the display

interfaces **An RS 232 and USB interface** enable connecting the unit to a PC for operating and updating the device

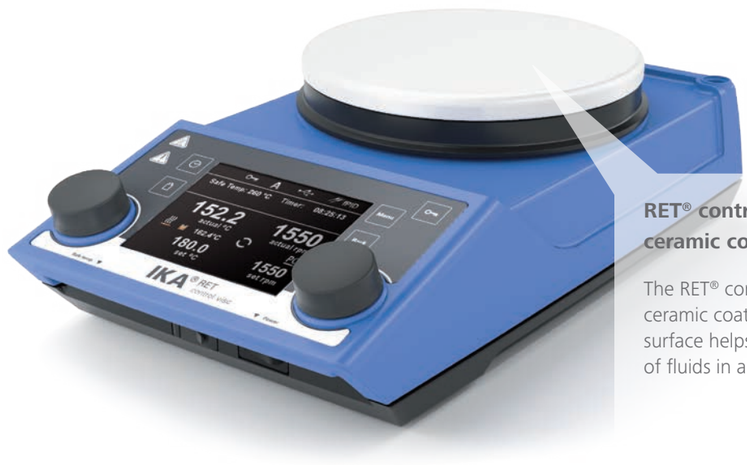


RET® control-visc with high-quality stainless-steel heating plate surface

The stainless steel surface of the composite plate enables the most efficient heat transfer to the medium and results in the fastest possible heating of the medium.

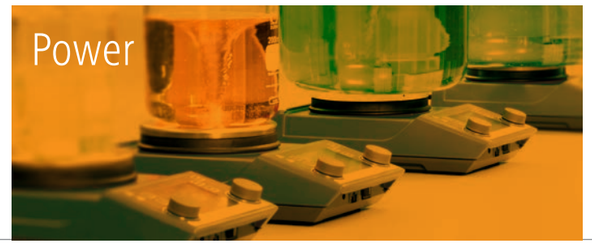
Unique
Torque trend measurement

Patented



RET® control-visc white with ceramic coated heating plate

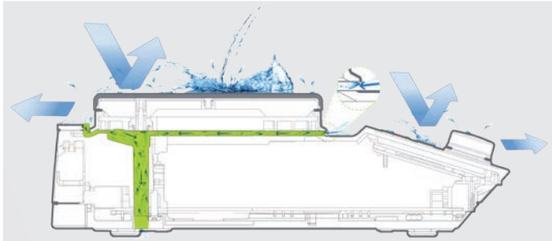
The RET® control-visc white offers a ceramic coated heating plate. The white surface helps to recognize color changes of fluids in a glass vessel.



> The RET® control-visc offers excellent safety

The device comes with a coated and sealed housing which protects liquids from entering into the magnetic stirrer. Overheating is prevented by several integrated technical features. In the case of a malfunction, the device shuts down automatically and shows the error code on the TFT display. The integrated safety features also allow for an unsupervised operation of the RET® control-visc.

> Sealed housing



In case of a liquid overflow a built-in drainage protects the electronic components of the device.

> Liquids cannot get inside the unit
> Components are safe
> Isolated drain

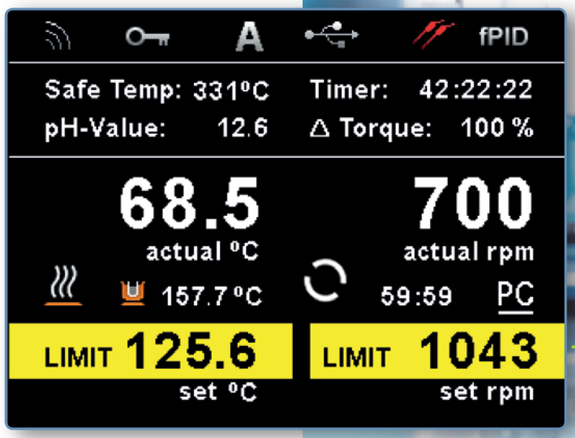
Sealed housing
to protect motor and display

> Three temperature safety protection features

"Safety Temperature"
is an adjustable temperature safety circuit that prevents from exceeding a specified set temperature.
The safety temperature can be adjusted by using a special tool included in the product delivery.

"Overheating protection"
Should the internal temperature of the RET® control-visc exceed the permissible temperature that would damage the internal electronic components, the heating power is reduced automatically.

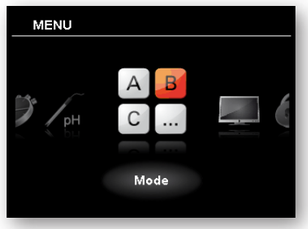
"Set temperature"
can be adjusted easily. It is used to safely heat the medium until the set temperature is reached.



> Safe operation

Operating modes

The unit is equipped with three operating modes:
A Mode: regular operation, all values can be directly changed.
B Mode: all settings are stored when the device is switched off or loses power, functions are restored when the unit is switched ON again.
C Mode: If operating in C-Mode the set values are not changeable. When restarting the device these values are still fixed. In order to change the parameters, the software mode has to be changed to A or B through the display menu.



Password protection

Menu access can be password protected. If enabled, users cannot change any settings without password.

Adjustable limits

Limits can be set for speed and temperature. It is possible to set a minimum value for each parameter.

Lock button protects set parameters

YOUR BENEFITS

Coated and sealed housing
> Liquids can not get inside the unit
> Components are safe
> Isolated drain
> Protection class IP 42

Three temperature safety protection features
> Highest possible safety especially when working with easily flammable liquids
> Manually adjustable safety circuit
> Overheating protection for electronic components

C Mode advantages
> Protected against changes to set values
> Values are still fixed after restarting the device, suitable for serial testing
> Automated restart after power outage to operating mode and set values

> RET® control-visc is the strongest magnetic stirrer in its class

Three components provide an extraordinarily powerful magnetic stirrer:

1. high performance EC motor with 12 W output
2. high performance internal transformer providing efficient power
3. composite heating plate with minimal eddy current losses

The unique structure of the insulated heating plate results in faster heating than other magnetic stirrers.

Compact and closed composite heating plate, combined with an advanced heating foil and engineered insulation, ensures an even temperature distribution on the heating plate.

> Heating performance
powerful and efficient heat transfer into the sample

Heating rate
7 K/min for 1 l H_2O at 600 W

> Stirring performance
Powerful EC motor with high performance internal transformer

YOUR BENEFITS

Highly powerful and energy efficient

- > High stirring speed stability
- > Fast heating times
- > High temperature stability
- > Motor / transformator / composite heating plate = high performance of stirring and heating
- > Engineered heating plate insulation
- > Optimized heating through intelligent product design

The heart of the RET® control-visc is the ARM-based microcontroller which is also used in smart phones and tablets. The use of the ARM-based microcontroller technology provides the intelligence of simple navigation, firmware update possibilty, weighing and torque trend measurement.

> Intelligent features

Integrated and patented weighing function
Perform simple weighing tasks without taking the sample off the device.

Torque trend measurement
Relative viscosity changes can be measured with this feature by using a torque trend measurement device. Results can be depicted on the display. Useful for long term studies, test results can be documented through labworldsoft®. Reproducibility with max. deviation of ±1%.

Stirring bar decoupling detection
The stirring function stops briefly when a decoupling occurs. It will automatically resume to the previously set speed when the stir bar is recoupled.
Useful for long-term studies and when working with non-transparent fluids.

Firmware update tool
> Keep your device up-to-date
> Software upgrade features

The RET® control-visc has a USB, RS 232 and Bluetooth interface:
Connect the unit to a PC for controlling and updating the device

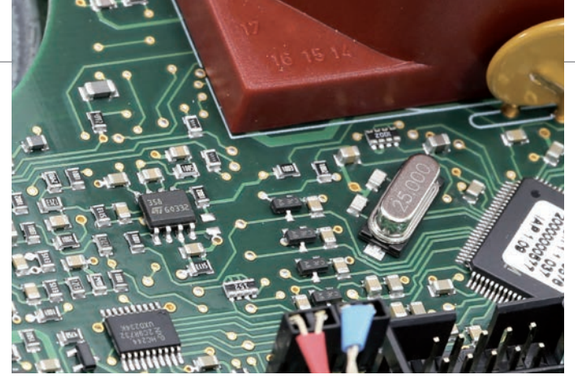
Unique
Torque trend measurement

Measure weight changes of up to 5,000 g	
Tolerance	< 500 g : ± 1 g > 500 g : ± 5 g

YOUR BENEFITS

Intelligent solutions
> User-friendly
> Simple navigation and easy operation
> Multilingual task menu
> User-defined display settings
> labworldsoft® compatible

www.ika.com labworldsoft® >ready



> Advanced technology

Integrated ARM-based microcontroller

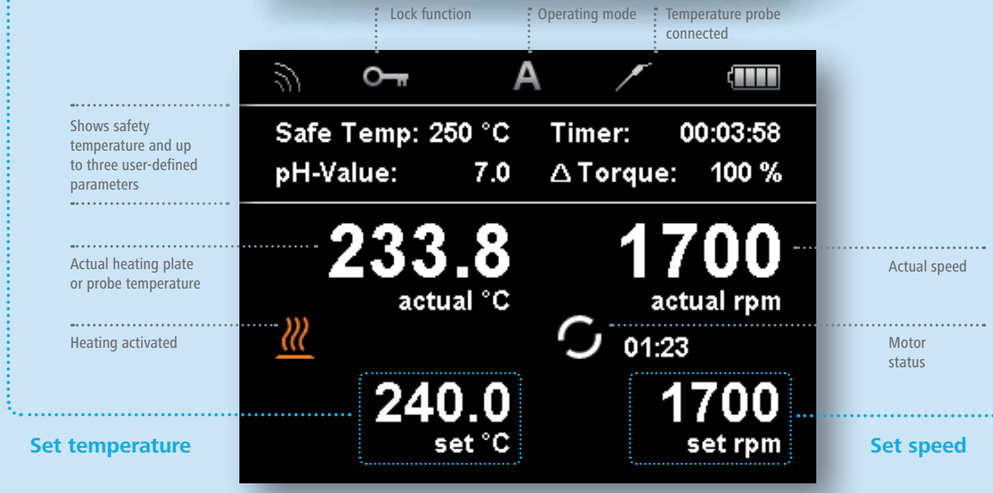
The RET® control-visc uses technology which is used in smart phones or tablets. Two integrated ARM-based microcontroller along with a graphic controller are the base for all intelligent functions within the RET® control-visc. They provide for speed, energy efficiency and powerful performance. When selecting components, the IKA® engineers focus on quality, safety and reliability.

> Easy operation with user-friendly display

The RET® control-visc continues the user-friendly tradition of operating the unit with two rotating knobs. They enable the easy and direct change of the most important parameters on the display menu.

The high-resolution display has easy to understand icons that allow for simple navigation through the menu, as well as allow for adjusting display settings, using the weighing or torque trend measurement functions, or changing the display language.

Easy operation and display of all relevant information at one glance



RCT basic | **Advanced technology**

The bestseller RCT basic is now available in an upgraded version. New ergonomic design incorporates the latest technology. Integrated temperature control feature enables connection of a temperature probe for precise temperature control.

Digital Display
Enables comparison of set and actual temperatures as well as stirring speed.

Precise temperature control
The set temperature is reached quickly and held stable.

Two independent control circuits
The set temperature values are held constant in the event of a malfunction of one control circuit.

Best-seller!

INTEGRATED **SAFETY**

Safety first hand with the RCT basic

**With new technology for more capacity.
Stronger motor for a higher range of speeds.
Additional temperature control mode for faster heating of medium.**

> Integrated temperature control
> Incl. PT 1000 temperature sensor (PT 1000.60)
> Exact temperature and speed setting via digital display, even when switched off
> Set safety temperature limit displayed digitally
> Hot Top indicator >> hot surface warning to prevent burns!
> Digital error code display
> With adjustable safety circuit of heating plate temperature (50 – 360 °C)
> Safety magnetic stirrer with heating, suitable for unsupervised operation
> Bushing according to DIN 12878 for connecting a contact thermometer, e.g. ETS-D5, enables precise temperature control
> High level of safety thanks to improved heat control technology
> Enclosed assembly (IP 42) guarantees long service life
> Highly polished aluminium heating plate for optimum heat transfer
> Improved magnetic adhesion
> Incl. protection cover H 100

Hot Top indicator
to prevent burns

Digital display for precise monitoring of speed and temperature

Integrated temperature sensor
for precise temperature control

Rotating Knob for adjusting the speed and the temperature

RH basic & digital | **Highly efficient & economical!**

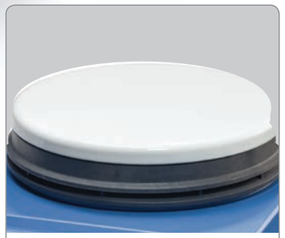
Hot Top indicator
to prevent burns

Digital display for precise monitoring of speed and temperature

Soft start prevents the spraying of medium

Adjustable safety temperature

DIN Bushing 12878 for connecting an electronic contact thermometer



RH basic / digital with white coated heating plate!

> Offers excellent chemical resistance
> Easy to clean

The newly designed low-cost magnetic stirrers RH basic and digital are now available with enhanced features ensuring better performance and exceptional heating solutions. The strong magnetic field and wide speed range ensures usage for volumes up to 15 liters with ease.

Perfect and precise temperature control!

IKA® +

The convenient carrying handle and the compact design makes the unit ultra-portable and offers easy transportation

RH digital is an innovatively designed magnetic stirrer featuring a composite hot plate and a high heat output of 600 watts ensuring rapid heating. Bushing according to DIN 12878 for connecting an electronic contact thermometer, such as the ETS-D5 enables precise temperature control. With ETS-D5 in the solution, the RH digital will not overshoot the adjusted temperature.

C-MAG HS 4 | 7 | 10

Watch the video now:
www.ika.com/video

Hot Top indicator
to prevent burns

Elevated control panel
for protection against spilled liquids

Ceramic set-up plate offers excellent chemical resistance to acid, bases and solvents

DIN Bushing 12878 for connecting an electronic contact thermometer
(Available only for C-MAG HS 7 & 10)

C-MAG HS digital 4 | 7 | 10 | **Highly safe & accurate!**

Ceramic set-up plate offers excellent chemical resistance to acid, bases and solvents

Hot Top indicator
to prevent burns

Elevated control panel
for protection against spilled liquids

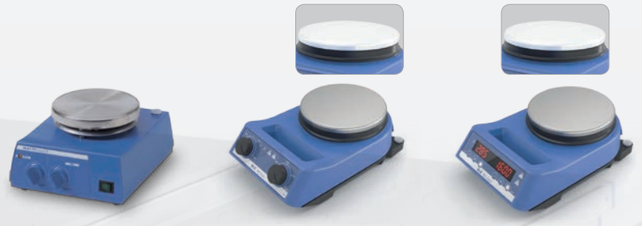
LCD display for simultaneous display of target and actual temperatures

Integrated temperature sensor for precise temperature control

The new C-MAG HS digital magnetic stirrers with heating come equipped with a ceramic heating plate which offers excellent chemical resistance and an LCD display.
A connection for a PT 1000 temperature sensor enables precise temperature control of the medium temperature (PT 1000 sensor included in delivery).

Overview IKA® magnetic stirrers

IKA® offers a wide range of magnetic stirrers. Compare the following IKA® hotplate stirrers to help you find the most suitable unit for your application.



Technical data	RH basic 2	RH basic	RH digital	C-MAG HS 7	C-MAG 7 digital	RCT basic	RET® basic	RET® control- visc
Display	Scale	Scale	LED	LED / Scale	LCD / Scale	LED	LED	high-res TFT
Max. heating plate temperature	320 °C	320 °C	320 °C	500 °C	500 °C	310 °C	340 °C	340 °C
Heat output	400 W	600 W	600 W	1000 W	1000 W	600 W	600 W	600 W
Max. stirring quantity (H,O)	10 l	15 l	15 l	15 l	15 l	20 l	20 l	20 l
Heating plate material	stainless steel	stainless steel - composite / white ceramic	stainless steel - composite / white ceramic	white ceramic	white ceramic	aluminum alloy	stainless steel - composite	stainless steel - composite / white ceramic
Connection for ext. temp. sensor	–	ETS-D x ✓	ETS-D x ✓	ETS-D x ✓	PT 1000 ✓	PT 1000 ✓	PT 1000 ✓	PT 100 ✓
Integrated temperature regulation	–	–	–	–	precise ✓	yes ✓	yes ✓	high-precision ✓
Control accuracy with integrated temperature regulation					± 0.5 K	± 1 K	± 1 K	± 0.2 K
Interface for external control > labworldsoft	–	–	–	–	–	–	–	RS 232 / USB ✓
Weighing, torque trend, pH	–	–	–	–	–	–	–	yes ✓
Firmware update tool	–	–	–	–	–	–	–	yes ✓
Protection class according to DIN EN 60529	IP 21	IP 21	IP 21	IP 21	IP 21	IP 42	IP 42	IP 42
	Basic stirring and heating functionality.	Basic stirring and heating functionality with composite heating plate in stainless steel or white ceramic coated. External temperature control possible by connecting a contact thermometer (only ETS-D series)	Basic stirring and heating functionality with composite heating plate in stainless steel or white ceramic coated. External temperature control is possible by connecting a contact thermometer (only ETS-D series). Digital LED display for speed and temperature.	Basic stirring and heating functionality with full-ceramic square plate to achieve higher temperatures. External temperature control is possible by connecting a contact thermometer with precise control accuracy (ETS-D series). Digital LED display for heating plate temperature.	Basic stirring and heating functionality with full-ceramic square plate to realize higher temperatures. External temperature control is possible by connecting the included temperature sensor (PT 1000) to have precise temperature control accuracy of up to ± 0.5 K. Digital LCD display for set and actual heating plate temperature.	Extended stirring and heating performance with aluminum alloy heating plate. External temperature control is possible by connecting the included temperature sensor (PT 1000). Digital LED display for speed and temperature.	Optimized stirring and extended heating performance with composite stainless steel heating plate. External temperature control is possible by connecting the included temperature sensor. Digital LED display for speed and temperature.	Optimized stirring and heating performance with composite heating plate in stainless steel or white ceramic coated. External temperature control is possible by connecting the included temperature sensor (PT 1000); the unit is capable of high-precision temperature control (± 0.2 K). High-resolution TFT display enables easy operation.

IKA®+

Please visit **www.ika.com** for more information on IKA®'s magnetic stirrers and accessories

RT 5 | 10 | 15 | **Magnetic coil & Heating foil**

The new RT series of multi-position digital magnetic hotplate stirrers are ideal for synchronous heating and stirring applications. The wear-free magnetic coil technology provides consistent and noiseless stirring on all positions. The RT series of magnetic stirrers are available with 5, 10 and 15 stirring positions and can be used for volumes up to 6 l (H_2O).

Digital display for precise monitoring of the speed

Heating foil for homogeneous temperature distribution of the heating plate

Reverse rotation switch for better mixing results

Hot Top indicator to prevent burns

Wear-free magnetic coils for consistent and silent operation

Eco-mode for a low self-warming of the surface

RO 5 | 10 | 15 | **Magnetic coil technology**

The new RO series of multi-position digital magnetic stirrers without heating are ideal for synchronous stirring. The closed and compact design allows easy cleaning and protects the equipment against the penetration of liquids. The RO series of magnetic stirrers are available with 5, 10 and 15 stirring positions and can be used for volumes up to 6 l (H_2O).

Digital display for precise monitoring of speed and temperature

Foil keypad for easy operation

Reverse rotation switch for better mixing results

Wear-free magnetic coils for consistent and silent operation

Eco-mode for a low self-warming of the surface

IKA®+

The magnetic coil technology works on the inductive principle with alternative current (AC) as its driving force. The generated magnetic field drives the magnetic bar into vessels.

The drive is 100% wear and maintenance-free and has no moving parts, for example belts, bearings, engine parts etc. The flat and space-saving design requires only limited space and fits in all lab settings.

Technical data	RH basic | RH basic white	RH digital | RH digital white
Max. stirring quantity (H_2O)	15 l	15 l
Motor rating input / output	15 / 2 W	15 / 2 W
Speed range	50 – 2000 rpm	50 – 2000 rpm
Timer	–	–
Speed display	Scale	LED
Max. stirring bar length	80 mm	80 mm
Heat output	600 W	600 W
Heating rate (1 l H_2O in H15)	6 K/min	6 K/min
Temperature range	50 – 320 °C	50 – 320 °C
Setting accuracy	– | ± 5 K	– | ± 5 K
Adjustable safety circuit	50 – 370 °C	50 – 370 °C
Connection for ext. temp. sensor	DIN 12878	DIN 12878
Control accuracy with sensor	ETS-D5: ± 0.5 K ETS-D6: ± 0.2 K	ETS-D5: ± 0.5 K ETS-D6: ± 0.2 K
Set-up plate material	stainless steel 1.4301 | white ceramic	stainless steel 1.4301 | white ceramic
Set-up plate dimensions	Ø 135 mm	Ø 135 mm
Dimensions (W x D x H)	160 x 246 x 90 mm	160 x 246 x 90 mm
Weight	2 kg	2 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%
Protection class acc. to DIN EN 60529	IP 21	IP 21
Voltage	115 V	115 V
Frequency	50/60 Hz	50/60 Hz
Interface	–	–
Price	**$ 549 | $ 580**	**$ 604 | $ 649**
	RH basic: **Ident. No. 5019701**	RH digital: **Ident. No. 5019801**
	RH basic white: **Ident. No. 5029701**	RH digital white: **Ident. No. 4678001**

Technical data	RCT basic	RET basic	RET® control- visc RET® control- visc white
Max. stirring quantity (H_2O)	20 l	20 l	20 l
Motor rating input / output	16 / 9 W	16 / 9 W	16 / 9 W
Speed range	50 – 1500 rpm	50 – 1700 rpm	50 – 1700 rpm
Speed display	LED	LED	TFT
Max. stirring bar length	80 mm	80 mm	80 mm
Heat output	600 W	600 W	600 W
Heating rate (1 l H_2O in H15)	6.5 K/min	7 K/min	7 K/min
Temperature range	RT – 340 °C	RT – 340 °C	RT – 340 °C
Setting accuracy	± 1 K	± 1 K	± 0.1 K
Adjustable safety circuit	50 – 370 °C	50 – 360 °C	50 – 370 °C
Connection for ext. temp. sensor	DIN 12878	DIN 12878	DIN 12878
Control accuracy with sensor	PT 1000: ± 1 K ETS-D5: ± 0.5 K | ETS-D6: ± 0.2 K	PT 1000: ± 1 K ETS-D5: ± 0.5 K | ETS-D6: ± 0.2 K	PT 100: ± 0.2 K
Set-up plate material	aluminium alloy	aluminum	stainless steel 1.4301 | white ceramic
Set-up plate dimensions	Ø 135 mm	Ø 135 mm	Ø 135 mm
Dimensions (W x D x H)	160 x 270 x 85 mm	160 x 270 x 95 mm	160 x 270 x 85 mm
Weight	2.5 kg	2.5 kg	3 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class acc. to DIN EN 60529	IP 42	IP 42	IP 42
Voltage	115 V	115 V	115 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Interface	–	–	USB / RS 232
Price	**$ 890**	**$ 1,078**	**$ 990 | $ 999**
	Ident. No. 3810001*	**Ident. No. 3622001**	RET® control- visc: **Ident. No. 5020001****
			RET® control- visc white: **Ident. No. 5030001****

*** PT 1000.60 included in delivery.**

**** PT 100.70 included in delivery.**

C-MAG HS 4

C-MAG HS 7

C-MAG HS 10

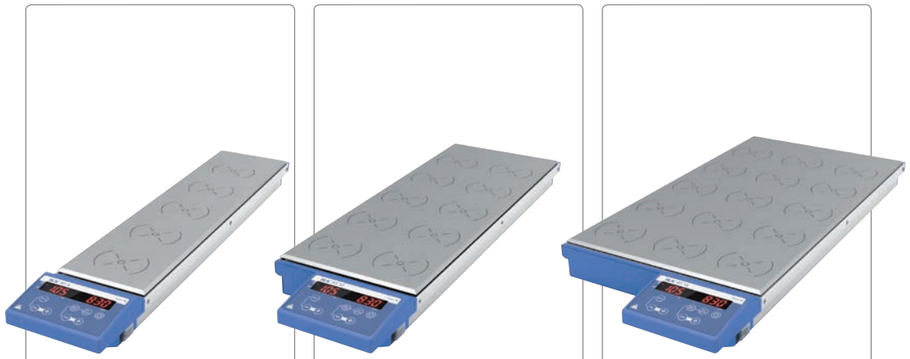
Technical data			
Max. stirring quantity (H_2O)	5 l	10 l	15 l
Motor rating input / output	15 / 1.5 W	15 / 1.5 W	15 / 1.5 W
Speed range	100 – 1500 rpm	100 – 1500 rpm	100 – 1500 rpm
Speed display	scale	scale	scale
Max. stirring bar length	30 mm	80 mm	80 mm
Heat output	250 W	1000 W	1500 W
Heating rate (1 l H_2O in H15)	2.5 K/min	5 K/min	5 K/min
Temperature range	50 – 500 °C	50 – 500 °C	50 – 500 °C
Temperature display	LED	LED	LED
Setting accuracy	± 10 K	± 10 K	± 10 K
Adjustable safety circuit	550 °C (fixed)	550 °C (fixed)	550 °C (fixed)
Connection for ext. temp. sensor	–	DIN 12878	DIN 12878
Control accuracy with sensor	–	± 0.5 K	± 0.5 K
Set-up plate material	ceramic	ceramic	ceramic
Set-up plate dimensions	100 x 100 mm	180 x 180 mm	260 x 260 mm
Dimensions (W x D x H)	150 x 260 x 105 mm	220 x 330 x 105 mm	300 x 415 x 105 mm
Weight	3 kg	5 kg	6 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class acc. to DIN EN 60529	IP 21	IP 21	IP 21
Voltage	115 V	115 V	115 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Interface	–	–	–
Price	**$ 556**	**$ 570 | $ 835**	**$ 695**
	Ident. No. 3581001	C-MAG HS 7: **Ident. No. 3581201** C-MAG HS 7 Package: **Ident. No. L005457**	**Ident. No. 3581401**

C-MAG HS 4 digital

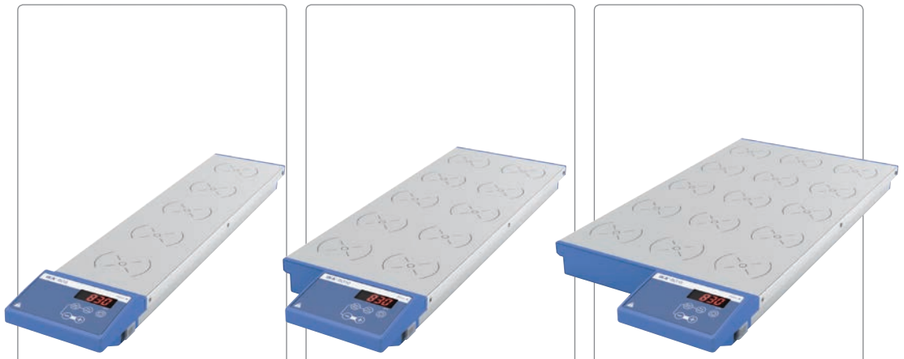
C-MAG HS 7 digital

C-MAG HS 10 digital

Technical data			
Max. stirring quantity (H_2O)	5 l	10 l	15 l
Motor rating input / output	15 / 1.5 W	15 / 1.5 W	15 / 1.5 W
Speed range	100 – 1500 rpm	100 – 1500 rpm	100 – 1500 rpm
Speed display	scale	scale	scale
Max. stirring bar length	30 mm	80 mm	80 mm
Heat output	250 W	1000 W	1500 W
Heating rate (1 l H_2O in H15)	2.5 K/min	5 K/min	5 K/min
Temperature range	50 – 500 °C	50 – 500 °C	50 – 500 °C
Temperature display	LCD	LCD	LCD
Setting accuracy	± 1 K	± 1 K	± 1 K
Adjustable safety circuit	550 °C (fixed)	550 °C (fixed)	550 °C (fixed)
Connection for ext. temp. sensor	DIN 12878	DIN 12878	DIN 12878
Control accuracy with sensor	± 0.5 K	± 0.5 K	± 0.5 K
Set-up plate material	ceramic	ceramic	ceramic
Set-up plate dimensions	100 x 100 mm	180 x 180 mm	260 x 260 mm
Dimensions (W x D x H)	150 x 260 x 105 mm	220 x 330 x 105 mm	300 x 415 x 105 mm
Weight	3 kg	5 kg	6 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class acc. to DIN EN 60529	IP 21	IP 21	IP 21
Voltage	115 V	115 V	115 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Interface	–	–	–
Price	**$ 567**	**$ 606**	**$ 890**
	Ident. No. 4240201	**Ident. No. 3487001**	**Ident. No. 4240401**



Technical data	RT 5	RT 10	RT 15
Number of stirring positions	5	10	15
Max. stirring quantity per stirring position (H_2O)	0.4 l	0.4 l	0.4 l
Distance between stirring places	90 mm	90 mm	90 mm
Deviation for individual stirring positions	0%	0%	0%
Max. stirring quantity (H_2O)	2 l	4 l	6 l
Speed range	0 – 1000 rpm	0 – 1000 rpm	0 – 1000 rpm
Speed display	LED line	LED line	LED line
Speed adjustment	10 rpm steps	10 rpm steps	10 rpm steps
Max. stirring bar length	30 mm	30 mm	30 mm
Heat output	175 W	375 W	580 W
Heating rate (1 l H_2O in H15)	3 K/min	3 K/min	3 K/min
Temperature range heatig plate	RT – 120 °C	RT – 120 °C	RT – 120 °C
Max. temperature medium (dep. on vessel)	70 °C	70 °C	70 °C
Temperature display	LED	LED	LED
Heat control accuracy	± 1 K	± 1 K	± 1 K
Set-up plate material	aluminium alloy	aluminium alloy	aluminium alloy
Set-up plate dimensions	110 x 495 mm	180 x 495 mm	270 x 495 mm
Dimensions (W x D x H)	120 x 610 x 60 mm	190 x 610 x 60 mm	280 x 610 x 60 mm
Weight	4 kg	7.5 kg	10.5 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class acc. to DIN EN 60529	IP 40	IP 40	IP 40
Voltage	115 V	115 V	115 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Price	$ 2,127	$ 2,505	$ 3,009
	Ident. No. 3690601	Ident. No. 3691101	Ident. No. 3692601



Technical data	RO 5	RO 10	RO 15
Number of stirring positions	5	10	15
Max. stirring quantity per stirring position (H_2O)	0.4 l	0.4 l	0.4 l
Distance between stirring places	90 mm	90 mm	90 mm
Deviation for individual stirring positions	0%	0%	0%
Max. stirring quantity (H_2O)	2 l	4 l	6 l
Speed range	0 – 1200 rpm	0 – 1200 rpm	0 – 1200 rpm
Speed display	LED line	LED line	LED line
Speed adjustment	10 rpm steps	10 rpm steps	10 rpm steps
Max. stirring bar length	30 mm	30 mm	30 mm
Set-up plate material	stainless steel 1.4301	stainless steel 1.4301	stainless steel 1.4301
Set-up plate dimensions	120 x 470 mm	190 x 470 mm	280 x 470 mm
Dimensions (W x D x H)	120 x 570 x 60 mm	190 x 570 x 60 mm	280 x 570 x 60 mm
Weight	3 kg	5 kg	7 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class acc. to DIN EN 60529	IP 40	IP 40	IP 40
Voltage	100 – 240 V	100 – 240 V	100 – 240 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Price	$ 1,579	$ 1,946	$ 2,313
	Ident. No. 3690500	Ident. No. 3691000	Ident. No. 3692500

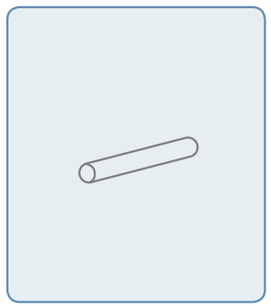
Technical data	topolino	topolino mobil	Mini MR standard
			
Max. stirring quantity (H_2O)	0.25 l	0.25 l	1 l
Motor rating input / output	1 / 0.8 W	1 / 0.8 W	3 / 2 W
Speed range	300 – 1800 rpm	300 – 1800 rpm	0 – 2500 rpm
Speed display	–	–	–
Max. stirring bar length	30 mm	30 mm	30 mm
Speed adjustment	stepless	stepless	stepless
Set-up plate material	synthetic (PP)	synthetic (PP)	polyester
Set-up plate dimensions	Ø 80 mm	Ø 80 mm	115 x 115 mm
Dimensions (W x D x H)	95 x 115 x 37 mm	Ø 140 x 42 mm	114 x 127 x 37 mm
Weight	0.32 kg	0.60 kg	0.25 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class acc. to DIN EN 60529	IP 21	IP 21	IP 42
Voltage	100 – 240 V	100 – 240 V	100 – 240 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Price	$ 85	$ 239	$ 190
	Ident. No. 3368001	Ident. No. 3381301	Ident. No. 3674000

Technical data	lab disc	color squid	big squid
			
Max. stirring quantity (H_2O)	0.8 l	1 l	1.5 l
Motor rating input / output	5 / 3 W	3 / 2 W	3 / 2 W
Speed range	15 – 1500 rpm	0 – 2500 rpm	0 – 2500 rpm
Speed display	–	LED	LED
Max. stirring bar length	25 mm	30 mm	30 mm
Speed adjustment	stepless	50 rpm steps	50 rpm steps
Set-up plate material	polyester	glass	glass
Set-up plate dimensions	Ø 100 mm	Ø 115 mm	Ø 160 mm
Dimensions (W x D x H)	117 x 180 x 12 mm	145 x 160 x 45 mm	180 x 195 x 40 mm
Weight	0.3 kg	0.54 kg	0.7 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class acc. to DIN EN 60529	IP 65	IP 54	IP 54
Voltage	100 – 240 V	100 – 240 V	100 – 240 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Price	$ 325	$ 344	$ 407
	Ident. No. 3907500 white Ident. No. 3765000 pattern Ident. No. 3916100 stream	A Ident. No. 3671000 white B Ident. No. 3698200 zebra C Ident. No. 3698300 bubbles D Ident. No. 3698400 wave E Ident. No. 4175500 Seleção F Ident. No. 4175300 solar sphere G Ident. No. 4175100 Stars and Stripes H Ident. No. 4175200 Union Jack I Ident. No. 4175400 red flag	A Ident. No. 3672000 white B Ident. No. 3857200 frozen C Ident. No. 3857100 leaves D Ident. No. 3857300 twist

Technical data	KMO 2 basic	Midi MR 1 digital	Maxi MR 1 digital
Max. stirring quantity (H_2O)	5 l	50 l	150 l
Motor rating input / output	14 / 4 W	70 / 19 W	80 / 35 W
Speed range	0 – 1100 rpm	0 – 1000 rpm	0 – 600 rpm
Speed display	scale	LCD	LCD
Max. stirring bar length	50 mm	80 mm	155 mm
Speed adjustment	stepless	stepless	stepless
Set-up plate material	stainless steel 1.4301	stainless steel 1.4301	stainless steel 1.4301
Set-up plate dimensions	140 x 120 mm	350 x 350 mm	500 x 500 mm
Dimensions (W x D x H)	140 x 200 x 75 mm	360 x 430 x 110 mm	505 x 585 x 110 mm
Weight	1.4 kg	10.7 kg	16 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class acc. to DIN EN 60529	IP 21	IP 21	IP 21
Voltage	115 V	115 V	115 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Price	$ 1,012	$ 2,747	$ 3,911
	Ident. No. 2812001	Ident. No. 2621901	Ident. No. 2621801

Technical data	C-MAG MS 4	C-MAG MS 7	C-MAG MS 10
Max. stirring quantity (H_2O)	5 l	10 l	15 l
Motor rating input / output	15 / 1.5 W	15 / 1.5 W	15 / 1.5 W
Speed range	100 – 1500 rpm	100 – 1500 rpm	100 – 1500 rpm
Speed display	scale	scale	scale
Max. stirring bar length	30 mm	80 mm	80 mm
Speed adjustment	scale 0 – 6	scale 0 – 6	scale 0 – 6
Set-up plate material	ceramic	ceramic	ceramic
Set-up plate dimensions	100 x 100 mm	180 x 180 mm	260 x 260 mm
Dimensions (W x D x H)	150 x 260 x 105 mm	220 x 330 x 105 mm	300 x 415 x 105 mm
Weight	3 kg	5 kg	6 kg
Permissible ambient temperature	5 – 40 °C	5 – 40 °C	5 – 40 °C
Permissible relative moisture	80%	80%	80%
Protection class acc. to DIN EN 60529	IP 21	IP 21	IP 21
Voltage	115 V	115 V	115 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Price	$ 474	$ 494	$ 726
	Ident. No. 3582201	Ident. No. 3582401	Ident. No. 3582601

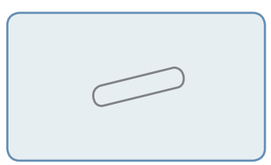
Stirring bars



IKAFLON® round

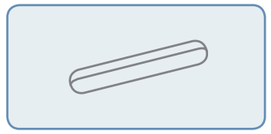
	Dimensions (L x Ø)	Ident. No.	Price
IKAFLON® 10 Set (5 Pcs) round PTFE-coated	10 x 6 mm	4488600	$ 14
IKAFLON® 15 Set (5 Pcs) round PTFE-coated	15 x 6 mm	4488700	$ 14
IKAFLON® 20 Set (5 Pcs) round PTFE-coated	20 x 8 mm	4488800	$ 14
IKAFLON® 25 Set (5 Pcs) round PTFE-coated	25 x 8 mm	4488900	$ 20
IKAFLON® 30 Set (5 Pcs) round PTFE-coated	30 x 8 mm	4489000	$ 17
IKAFLON® 40 Set (5 Pcs) round PTFE-coated	40 x 8 mm	4489100	$ 21
IKAFLON® 50 Set (5 Pcs) round PTFE-coated	50 x 8 mm	4489200	$ 23
IKAFLON® 80 Set (5 Pcs) round PTFE-coated	80 x 10 mm	4489300	$ 56
IKAFLON® 110 round PTFE-coated*	108 x 27 mm	0793300	$ 579
IKAFLON® 155 round PTFE-coated*	153 x 27 mm	1129000	$ 686

*** Used for large magnetic stirrers like Maxi MR 1 digital**



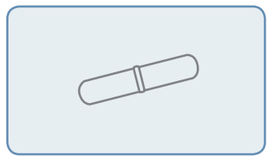
IKAFLON® glass round

	Dimensions (L x Ø)	Ident. No.	Price
IKAFLON® glass 25 Set (5 Pcs) round	25 x 6 mm	4492200	$ 21
IKAFLON® glass 30 Set (5 Pcs) round	30 x 6 mm	4492400	$ 22
IKAFLON® glass 40 Set (5 Pcs) round	45 x 8 mm	4492600	$ 23
IKAFLON® glass 50 Set (5 Pcs) round	50 x 8 mm	4492800	$ 25



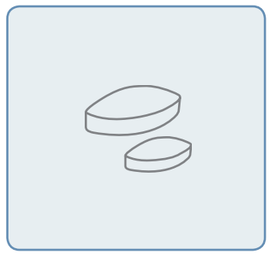
IKAFLON® power SmSo

	Dimensions (L x Ø)	Ident. No.	Price
IKAFLON® 20 Set (5 Pcs) power SmSo PTFE-coated	20 x 6 mm	4493000	$ 37
IKAFLON® 30 Set (5 Pcs) power SmSo PTFE-coated	30 x 6 mm	4493200	$ 50
IKAFLON® 50 Set (5 Pcs) power SmSo PTFE-coated	50 x 8 mm	4493400	$ 63



IKAFLON® slide round

	Dimensions (L x Ø)	Ident. No.	Price
IKAFLON® 25 Set (5 Pcs) slide round PTFE-coated	25 x 6 mm	4493800	$ 17
IKAFLON® 30 Set (5 Pcs) slide round PTFE-coated	30 x 6 mm	4494000	$ 17
IKAFLON® 40 Set (5 Pcs) slide round PTFE-coated	40 x 8 mm	4494200	$ 25
IKAFLON® 50 Set (5 Pcs) slide round PTFE-coated	50 x 8 mm	4494400	$ 33

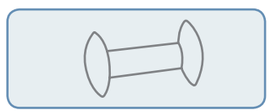


IKAFLON® ellipse

	Dimensions (L x Ø)	Ident. No.	Price
IKAFLON® 20 Set (5 Pcs) ellipse PTFE-coated	20 x 10 mm	4494600	$ 23
IKAFLON® 25 Set (5 Pcs) ellipse PTFE-coated	25 x 12 mm	4494800	$ 25
IKAFLON® 30 Set (5 Pcs) ellipse PTFE-coated	32 x 16 mm	4495000	$ 33
IKAFLON® 35 Set (5 Pcs) ellipse PTFE-coated	35 x 15 mm	4495200	$ 48
IKAFLON® 40 Set (5 Pcs) ellipse PTFE-coated	40 x 20 mm	4495400	$ 54
IKAFLON® 50 Set (5 Pcs) ellipse PTFE-coated	50 x 20 mm	4495600	$ 76
IKAFLON® 60 Set (5 Pcs) ellipse PTFE-coated	64 x 20 mm	4495800	$ 110
IKAFLON® 70 Set (5 Pcs) ellipse PTFE-coated	70 x 20 mm	4496000	$ 132

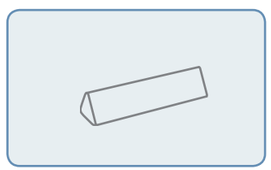
IKAFLON® cross

	Dimensions (L x Ø)	Ident. No.	Price
IKAFLON® 10 Set (5 Pcs) cross PTFE-coated	10 x 10 mm	4496200	$ 22
IKAFLON® 20 Set (5 Pcs) cross PTFE-coated	20 x 20 mm	4496400	$ 29
IKAFLON® 25 Set (5 Pcs) cross PTFE-coated	25 x 25 mm	4496600	$ 28
IKAFLON® 30 Set (5 Pcs) cross PTFE-coated	30 x 30 mm	4496800	$ 42
IKAFLON® 38 Set (5 Pcs) cross PTFE-coated	38 x 38 mm	4497000	$ 46



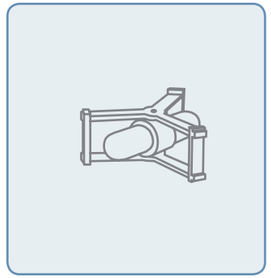
IKAFLON® bone

	Dimensions (L x Ø)	Ident. No.	Price
IKAFLON® 37 Set (5 Pcs) bone PTFE-coated	35 x 8 x 20 mm	4497200	$ 67
IKAFLON® 54 Set (5 Pcs) bone PTFE-coated	55 x 8 x 20 mm	4497400	$ 81



TRIKA®

	Dimensions (L x Ø)	Ident. No.	Price
TRIKA® 25 Set (5 Pcs) PTFE-coated	25 x 8 mm	4499300	$ 17
TRIKA® 35 Set (5 Pcs) PTFE-coated	35 x 9 mm	4499400	$ 24
TRIKA® 55 Set (5 Pcs) PTFE-coated	55 x 14 mm	4499500	$ 44
TRIKA® 80 Set (5 Pcs) PTFE-coated	80 x 17 mm	4499600	$ 62



IKAFLON® beaker

	(Ø x Height in mm, for beaker)	Ident. No.	Price
IKAFLON® 67 beaker PTFE-coated	67 x 21 mm with 50 x 8	4497600	$ 375
IKAFLON® 74 beaker PTFE-coated	74 x 29 mm with 60 x 9	4497800	$ 388
IKAFLON® 103 beaker PTFE-coated	103 x 32 mm with 80 x 10	4498000	$ 559
IKAFLON® 125 beaker PTFE-coated	125 x 48 mm with 106 x 25	4498200	$ 714

IKAFLON® crown

	(Ø x Height in mm)	Ident. No.	Price
IKAFLON® 9 Set (5 Pcs) crown PTFE-coated	9 x 6 mm	4498400	$ 19

Synthesis blocks

Dry heating block square series

		Hole Ø	Dimensions	Ident. No.	Price
1	H 135.10 square carrier without handle	–	160 x 160 mm	0025000832	$ 129
2	H 135.11 square carrier with handle	–	160 x 160 mm	0004448200	$ 147
	H 135.101 Block 16 x 4 ml	15.2 mm	79 x 79 mm	0025000626	$ 61
	H 135.102 Block 16 x 8 ml	17.5 mm	79 x 79 mm	0025000627	$ 66
3	H 135.103 Block 9 x 16 ml	20.5 mm	79 x 79 mm	0025000628	$ 67
4	H 135.104 Block 4 x 20 ml	28.5 mm	79 x 79 mm	0025000629	$ 58
	H 135.105 Block 4 x 30 ml	28.5 mm	79 x 79 mm	0025000630	$ 66
5	H 135.106 Block 4 x 40 ml	28.5 mm	79 x 79 mm	0025000631	$ 74
	H 135.107 Block 100 ml	–	79 x 79 mm	0025000632	$ 59
6	H 135.108 Block 250 ml	–	79 x 79 mm	0025000633	$ 70

100 ml Flask heating block series

		Max. Outer Ø	Inner Ø	Ident. No.	Price
7	H 135.20 Flask carrier 100 ml without handle	142 mm	–	0025000634	$ 121
8	H 135.21 flask carrier 100 ml with handle	142 mm		0004448300	$ 129
	H 135.201 Flask inlay 10 ml	–	33.8 mm	0025000636	$ 35
	H 135.202 Flask inlay 25 ml	–	43.8 mm	0025000637	$ 36
	H 135.203 Flask inlay 50 ml	–	52.8 mm	0025000638	$ 35

250 ml flask heating block series

		Max. Outer Ø	Inner Ø	Ident. No.	Price
9	H 135.25 flask carrier 250 ml without handle	142 mm		0025003280	On request
	H 135.26 flask carrier 250 ml with handle	142 mm		0020007954	On request

500 ml flask heating block series

		Max. Outer Ø	Inner Ø	Ident. No.	Price
10	H 135.30 flask carrier 500 ml without handle	142 mm	–	0025000639	$ 129
11	H 135.31 flask carrier 500 ml with handle	142 mm		0004448400	$ 147
	H 135.301 flask inlay 100 ml	–	66.3 mm	0025000641	$ 78
	H 135.302 flask inlay 250 ml	–	88 mm	0025000642	$ 78

1000 ml flask heating block series

		Max. Outer Ø	Inner Ø	Ident. No.	Price
12	H 135.40 flask carrier 1000 ml without handle	166.3 mm	–	0025000833	$ 187
13	H 135.41 flask carrier 1000 ml with handle	166.3 mm		0004448500	$ 212
14	H 135.401 flask inlay 500 ml	–	108 mm	0025000644	$ 134

2000 ml flask heating block series

		Max. Outer Ø	Inner Ø	Ident. No.	Price
15	H 135.50 flask carrier 2000 ml without handle	194.7 mm	–	0025000834	$ 228
16	H 135.51 flask carrier 2000 ml with handle	194.7 mm		0004448600	$ 262
	H 135.501 flask inlay 1000 ml	–	131.8 mm	0025000645	$ 197

Available Q1/2016
Available Q2/2016

Electronic contact thermometers

		Ident. No.	Price
1	ETS-D5	3378000	$ 342
	Electronic contact thermometer, -50 – 450 °C, 0.1 K resolution		
2	ETS-D6	3378100	$ 785
	Electronic contact thermometer. Similar to ETS-D5, additionally comes equipped with integrated pH measuring instrument (without pH electrode)		

Temperature sensors for ETS-D5 / D6

		Ident. No.	Price
3	H 62.51	2735451	$ 189
	Temperature sensor, stainless steel, Ø 3 mm, 260 mm length		
4	H 66.51	2735551	$ 235
	Temperature sensor, stainless steel, glass-coated, Ø 6 mm, 260 mm length		
	H 66.53	4499900	$ 320
	Temperature sensor, coated with SafeCoat, Ø 3 mm, 260 mm length		

ETS-D5 / D6 Accessories

		Ident. No.	Price
5	H 70	2735600	$ 122
	Extension cable, 1 m		

Temperature sensors for RCT / RET basic and C-MAG HS digital series

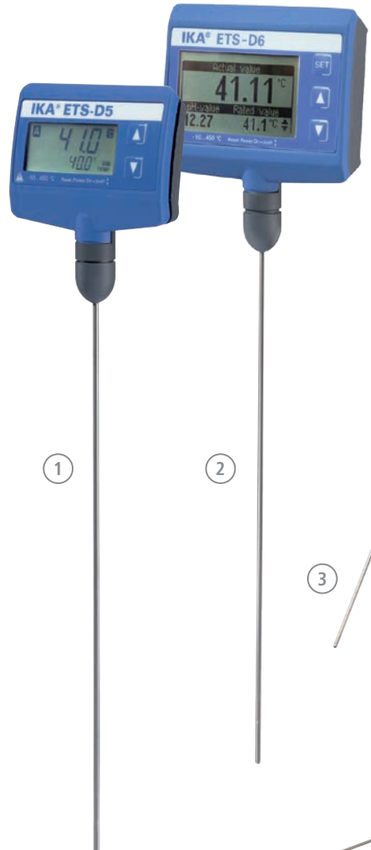
		Ident. No.	Price
6	PT 1000.60	3516800	$ 189
	Temperature sensor, stainless steel, Ø 3 mm, 230 mm length		
7	PT 1000.70	3736000	$ 260
	Temperature sensor, stainless steel, glass-coated, Ø 7 mm, 230 mm length		
8	PT 1000.80	4443000	$ 180
	Temperature sensor, stainless steel, Ø 3 mm, 150 mm length		
	PT 1000.90	4480600	$ 206
	Temperature sensor, stainless steel, coated with SafeCoat, Ø 3 mm, 230 mm length		

Temperature sensors for RET control / t and RET control

		Ident. No.	Price
9	PT 100.70	0020000440	On request
	Temperature sensor, stainless steel, Ø 3 mm, 230 mm length		
10	PT 1000.50	3367600	$ 400
	Temperature sensor, dual stainless steel, Ø 3 mm, 230 mm length		
11	PT 1000.51	3377700	On request
	Temperature sensor, dual stainless steel, glass-coated, Ø 3 mm		
12	PT 100.51	2600300	$ 606
	Temperature sensor, glass-coated, Ø 8 mm, 230 mm length		
	PT 100.53	4499700	$ 379
	Temperature sensor, stainless steel, coated with SafeCoat, Ø 3 mm, 230 mm length		
	PT 1000.53	4499800	$ 448
	Temperature sensor, coated with SafeCoat, 230 mm length		

Lifts

		Ident. No.	Price
13	LABLIFT m	4022400	$ 314
	Manual scissor lift		



IKA® +

manual lab lift

Suitable for all kind of laboratory applications

Advantages beaker, stainless steel

> No eddy current losses
> High magnetic adhesion force
> Very good heat transfer (3 L beaker and up: due to a round deepening area for fitting heating plates with Ø 135 mm)

Oil bath attachments

	Ident. No.	Price
H 29	2829400	$ 307
Oil bath attachment, 1 l, aluminum, inner Ø 136 – 180 mm, 81 mm height for use with oil only		
H 30	2829500	$ 361
Oil bath attachment, 1.5 l, aluminum, inner Ø 136 – 190 mm, 110 mm height for use with oil only		

Beakers

(14) H 1000	4444401	$ 485
Beaker, stainless steel, 1 l, inner Ø 160 mm, 79 mm height		
(15) H 1500	4444501	$ 421
Beaker, stainless steel, 1.5 l, inner Ø 140 mm, 160 mm height		
(16) H 3000	4444503	$ 470
Beaker, stainless steel, 3 l, inner Ø 180 mm, 119 mm height		
(17) H 5000	4444505	$ 582
Beaker, stainless steel, 5 l, inner Ø 220 mm, 142 mm height		
(18) H 8000	4444508	$ 890
Beaker, stainless steel, 8 l, inner Ø 265 mm, 162 mm height		


(14)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(16)


(17)


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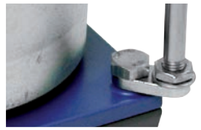
(20)


(21)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Protective covers

H 102	4281600	$ 41
Cover for RH basic		
H 103	4299100	$ 41
Cover for RH digital		
(19) H 100	3661000	$ 41
Cover for RET basic and RCT basic		
H 104	4209500	$ 41
Cover for RET control-visc		

Other accessories

(20) H 11 (Euro | USA | UK | CH plug)		
	1091500	$ 37
	3564500	
	2410700	
	1091600	
Mains cable, spare		
(21) H 16 V	1545100	$ 38
Support rod, Ø 10 mm, 450 mm length		
(22) H 16.1	5000500	$ 34
Extension for support rod		
(23) H 44	2437700	$ 26
Boss head clamp		
(24) H 38	3547700	$ 22
Holding rod		
HG 600	0020003416	On request
Heating jacket for beaker 600 ml		
HG 1000	0020003415	On request
Heating jacket for beaker 1000 ml		
BC 1000	0020003417	On request
Beaker cap		
C-MAG Adapter	0025001022	On request
Heating block Adapter for C-MAG		

Stirring bars

(25) RS 1	1358600	$ 261
Consisting of IKAFLON® (10 – 80 mm) and TRIKA® (25 and 40 mm) magnetic stirring bars		
RS 2	4499100	$ 274
Consisting of IKAFLON® 40 round, 40 glass, 30 power, 40 slide round, 40 ellipse, 40 TRIKA, 25 cross, 9 crown and 25 bone magnetic stirring bars		
(26) RSE	1293100	$ 96
Stirring bar remover		

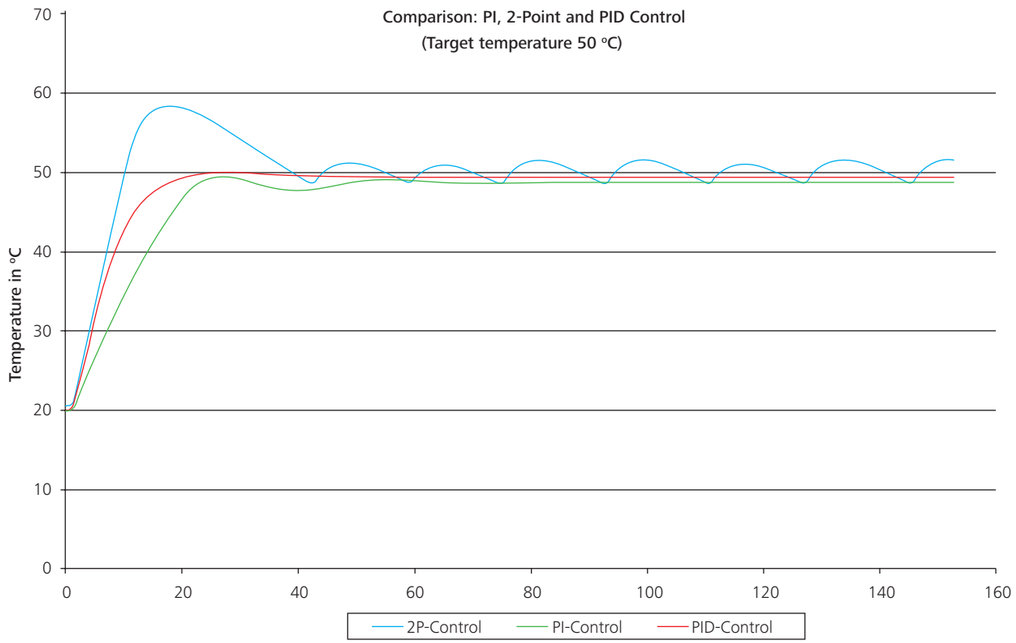
Excellent temperature control is a critical factor in heating operations to effectively address rheological changes in samples. The ETS-D5 can be attached to all IKA® magnetic stirring and heating devices with DIN bushing 12878 class 2, and also from other providers.

The ETS-D5 is an electronic contact thermometer with 3 operating modes. The electronic thermometer with optimized PID control ensures perfect temperature control without overshooting the set temperature, even in the case of quick heating.

PID control

PID stands for Proportional-Integral-Derivative, referring to the three terms operating on the error signal to produce a control signal. Some applications may require using only one or two actions to provide the appropriate system control. P (Proportional) control can provide a stable process temperature but there will always be a deviation between the required set point and the actual process temperature. I (Integral) control represent the steady state error of the system and will remove set point / measured value errors. For many applications, P + I control will be satisfactory with good stability and at the desired set point. D control is usually used for processes with rapidly changing process outputs.

For example, if you heated up a liquid to a certain set temperature, the liquid no longer gets heated up. If the liquid cools down slowly, the PI control reacts immediately and slightly heats up the liquid. So it appears as though the liquid can hold this temperature without any deviation. In reality, the controller responds to the slightest temperature fluctuations. If you add ice water to this liquid, the temperature changes very quickly. The D control responds to the rapid changes until the desired temperature is reached. Then, the difference of the temperature to be achieved is not too big and the last fine tuning is controlled by the PI control. By tuning P, I and D, a very fast and accurate temperature control can be achieved!



Can IKA® magnetic stirrers run 24 hrs for several days?
Yes, a maximum ON time is not prescribed.

Is there a minimum, maximum or optimum distance from the stirrer surface to the vessel for magnetic stirrers?
The maximum distance depends on the volume and the viscosity of the corresponding medium. For example, a small amount of water up to 5 cm can be reached. The optimum distance is 0 cm, when the vessel is in contact with the magnetic stirrer surface.

What is the right size for stirring bars being used in common beakers for stirring water or aqueous solutions?
In general, 30 mm stirring bars are suitable for most applications.

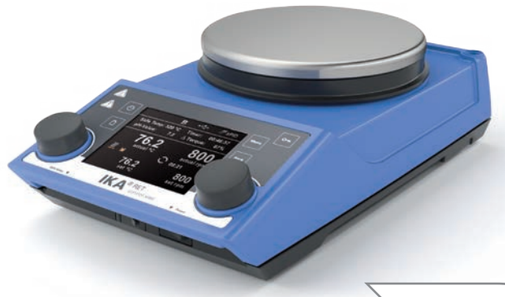
How can IKA® stirring bars be sterilized?
IKA® magnetic stirring bars are PTFE (Teflon) coated and can be sterilized in many ways: e.g. autoclaving or treatment with alcohol or fungicide is possible.

Is there a maximum load prescribed for IKA® magnetic stirrers?
The magnetic stirrer carries definitely the maximum volume of water plus the weight of a common vessel. E.g., the RCT carries 20 kg water plus a 20 liter vessel (about 5 – 10 kg), altogether about 25 – 30 kg!

What is the maximum viscosity that can be operated with an IKA® magnetic stirrer?
A magnetic stirrer is constructed for working with aqueous solutions or low viscous medium up to 100 mPas.

Is there a recommended speed for magnetic stirrers?
To reach a steady mixture, the speed should not be too slow. The most common applications require speed ranging from 400 to 800 rpm.

What are the required environmental conditions for the operation of an IKA® magnetic stirrer?
The relative humidity should not exceed 80%. The ambient temperature should be within + 5 °C and + 40 °C.



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