

IKA®

RET® control-visc

The Magnetic Stirrer for Scientists

شرکت ابزار طب
وارد گنده تجویرات
ازمایشگاهی - تحقیقاتی - علمی
تأسیس ۱۳۶۳

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designed
to work perfectly

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 competencies:

1. Safety. 2. Power. 3. Intelligence.

This is made possible 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 housing to protect motor and display
-  An integrated and patented weighing function allows the user to measure weight changes of up to 5,000 g
-  Torque trend measurement Viscosity changes in the medium can be measured using a torque measurement device. The results can be depicted on the display
-  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.



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.

RET® control-visc | Safety

> 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.



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> Safe operation

Operating modes

Password protection

The unit is equipped with three operating modes:
A Mode: In 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 powered ON again.
C Mode: If operating in C-Mode, the set values are not changeable. When the device is switched off, 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.

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

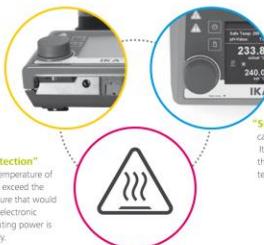
Adjustable limits

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

Lock button protects set parameters

> 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.



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

"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.



YOUR BENEFITS

Coated and sealed housing

- > Liquids can not get inside the unit
- > Components are safe
- > Isolated drain
- > Protection class IP42

Three temperature safety protection features

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

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

RET® control-visc | Power

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

Three components provide for an extraordinarily powerful magnetic stirrer:

1. high performance EC motor with 12W 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.

> 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/transformation/composite heating plate = high performance of stirring and heating
- > Engineered heating plate insulation
- > Optimized heating through intelligent product design

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Heating rate
7 K/min for 1 l H₂O at 600 W

> 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.

Easy operation and display of all relevant information at one glance



> IKA® Magnetic Stirrer with Scientists

The Scripps Research Institute (TSRI) is a nonprofit research institution whose philosophy emphasizes the creation of basic knowledge in the biosciences for its application in medicine, the pursuit of fundamental scientific advances through inter-disciplinary programs and collaborations, and the education and training of researchers preparing to meet the scientific challenges of the future.

For more information on The Scripps Research Institute, see:
www.scripps.edu/research

For more information on Phil S. Baran and the Baran Laboratory, see:
www.scripps.edu/baran



Integrated features



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- > **Sealed housing**
The housing is sealed to protect electronic components inside the device. Protection class IP 42.

- > **The temperature safety protection feature**
Set temperature for sample heating, adjustable safety circuit to avoid overheating of the heating plate, and overheating protection of internal components.

- > **Outstanding motor performance**
Enables more stirring power (motor rating output: RH basic = 2 W, RCT basic = 9 W, RET[®] control-visc = 12 W)

- > **Innovative heating plate**
Insulated composite heating plate results in efficient heating of the sample with minimal eddy current losses.

- > **Three different operating modes**
A Mode for regular operation, B Mode maintains preset parameters by the user from last operation when unit is powered on, C Mode for automatic restart after power outage to resume operation at preset settings.

- > **Optional safety-temperature confirmation**
Safety temperature has to be confirmed when starting the device (this confirmation function is optional and can be turned off through the task menu).

- > **High-efficient motor power**
More stirring power through high-efficient motor.

- > **Heating plate with stainless steel surface**
Enables quickest and safest heating of the sample.

- > **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 and/or maximum value for each parameter.

- > **Three different temperature control modes**

- aPID (PID[®]): slow, but accurate heating of the medium; no overshooting of the temperature
IPID: rapid heating and high control accuracy; minor overshooting is possible
3 PID: fast, but with overshooting of sample temperature of up to 10 °C
* PID: a proportional-integral-derivative controller

- > **Heating plate with white ceramic coating**
Allows for excellent chemical resistance.

- > **Temperature control with dual temperature sensor**
Simultaneous control of the temperature of the heating plate and the sample.

- > **Lock function**
"Key" lock to prevent changes of set values.



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- > **Integrated weighing function**
Perform simple weighing tasks without taking the sample off the device.

- > **High-resolution TFT display**
Lets the user see all relevant data clearly and simultaneously.

- > **Bluetooth interface**
Integrated Bluetooth interface (to use with Labworldsoft[®] and PC connection)

- > **Torque trend measurement**
Relative viscosity changes can be measured with this feature.

- > **Multilingual menu**
The user can change the display language, there are 9 languages to choose from.

- > **"HOT" warning**
When the device is off and the heating plate is hot, the display shows the warning "HOT" and the current heating plate temperature. The display turns off completely when the temperature of the heating plate drops below 50 °C.

- > **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 recognized.

- > **Display view**
can be modified by the user, certain values can be shown or hidden.

- > **Interval mode**
The stirring function can be programmed to stop and automatically restart in intervals adjustable by the user.

- > **pH measurement**
Measuring pH values is possible with pH sensors (BNC-connector), available through IKA[®] or other manufacturers.

- > **Error code display**
When an error occurs, the code is shown on the display. Please refer to the manual for further details.

- > **Sensor calibration**
Temperature and pH sensors can be calibrated through the RET[®] control-visc against a known calibrated source (i. e. temperature device and pH buffer solution respectively).

- > **Reset**
The device can be reset to factory defaults.

- > **Timer function**
Stop the heating process automatically after a specified time (max. 99:59:59).

Technical data

Technical data	
Max. stirring quantity (R.O.)	20 l
Motor stirring input / output	227 / 12 W
Speed range	50 – 1700 rpm
Heat input	600 W
Temperature range	8 °C – 180 °C
Adjustable safety circuit	50 – 180 °C
Control accuracy with sensor	PT 100; ± 0.2 K
Heating plate material	stainless steel 1.4301 white ceramic
Heating plate dimensions	Ø 135 mm
Dimensions (W x D x H)	160 x 270 x 85 mm
Weight	3 kg
Permissible ambient temperature	5 – 40 °C
Price	1.043,- EUR 1.066,- EUR

Ident. No. 0005020000 | 0005030000

Protection class according to DIN EN 60529



3 Year warranty*

Protection class according to DIN EN 60529: IP 42

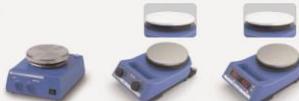


The RET® control-visc comes with the following accessories

- (1) PT 100.70 temperature sensor
Temperature sensor, stainless steel
- (2) Safety circuit tool
Tool to adjust safety circuit
- (3) H 104 protective cover (transparent)
Cover for RET® control-visc
- (4) Magnetic stirring bars
KALFON® 30-round PTFE coated
KALFON® 40-round PTFE coated
- (5) USB Cable
- (6) Power plug H 11
Mains cable, plug depending on region

Overview IKA® magnetic stirrers

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



Technical data

RH basic 2
Display
Max. heating plate temperature
Heat input
Max. stirring quantity (R.O.)
Heating plate material
Connection for ext. temp. sensor
Integrated temperature regulation
Control accuracy with external temperature regulation
Interface for external controls > Labworks®
Weighing, torque trend, pH
Firmware update tool
Protection class according to DIN EN 60529

RH basic 2

Scale	LED
Max. stirring quantity (R.O.)	20 l
Heating plate material	stainless steel
Connection for ext. temp. sensor	–
Integrated temperature regulation	–
Control accuracy with external temperature regulation	–
Interface for external controls > Labworks®	–
Weighing, torque trend, pH	–
Firmware update tool	–
Protection class according to DIN EN 60529	IP 21

Basic stirring and heating functionality

Basic stirring and heating functionality with composite heating plate made of stainless steel or white ceramic coated. External temperature control by connecting a contact thermometer (only ETS-D series). Digital LED display for speed and temperature.

RH basic

Scale	220°C
Max. stirring quantity (R.O.)	400 W
Heating plate material	10 l
Connection for ext. temp. sensor	–
Integrated temperature regulation	–
Control accuracy with external temperature regulation	–
Interface for external controls > Labworks®	–
Weighing, torque trend, pH	–
Firmware update tool	–
Protection class according to DIN EN 60529	IP 21

Basic stirring and heating functionality

Basic stirring and heating functionality with composite heating plate made of stainless steel or white ceramic coated. External temperature control by connecting a contact thermometer (only ETS-D series). Digital LED display for speed and temperature.

RH digital

Scale	220°C
Max. stirring quantity (R.O.)	600 W
Heating plate material	15 l
Connection for ext. temp. sensor	–
Integrated temperature regulation	–
Control accuracy with external temperature regulation	–
Interface for external controls > Labworks®	–
Weighing, torque trend, pH	–
Firmware update tool	–
Protection class according to DIN EN 60529	IP 21

Basic stirring and heating functionality

Basic stirring and heating functionality with composite heating plate made of stainless steel or white ceramic coated. External temperature control by connecting a contact thermometer (only ETS-D series). Digital LED display for speed and temperature.

C-MAG HS 7

LED / Scale	500°C
Max. stirring quantity (R.O.)	1000 W
Heating plate material	15 l
Connection for ext. temp. sensor	–
Integrated temperature regulation	–
Control accuracy with external temperature regulation	–
Interface for external controls > Labworks®	–
Weighing, torque trend, pH	–
Firmware update tool	–
Protection class according to DIN EN 60529	IP 21

Basic stirring and heating functionality

Basic stirring and heating functionality with full ceramic heating plate made of stainless steel or white ceramic coated. External temperature control is possible by connecting a contact thermometer with precise control accuracy (ETS-D series). Digital LED display for heating plate temperature.

C-MAG 7 digital

LED / Scale	500°C
Max. stirring quantity (R.O.)	1000 W
Heating plate material	white ceramic
Connection for ext. temp. sensor	–
Integrated temperature regulation	–
Control accuracy with external temperature regulation	–
Interface for external controls > Labworks®	–
Weighing, torque trend, pH	–
Firmware update tool	–
Protection class according to DIN EN 60529	IP 21

Basic stirring and heating functionality

Basic stirring and heating functionality with full ceramic heating plate made of stainless steel or white ceramic coated. External temperature control is possible by connecting a contact thermometer with precise control accuracy (PTS 1000). Digital LED display for speed and temperature.

RCT basic

LED	340°C
Max. stirring quantity (R.O.)	600 W
Heating plate material	20 l
Connection for ext. temp. sensor	–
Integrated temperature regulation	–
Control accuracy with external temperature regulation	–
Interface for external controls > Labworks®	–
Weighing, torque trend, pH	–
Firmware update tool	–
Protection class according to DIN EN 60529	IP 42

Extended stirring and heating functionality

Extended stirring and heating functionality with full ceramic heating plate made of stainless steel or white ceramic coated. External temperature control is possible by connecting a contact thermometer with precise control accuracy (PTS 1000). Digital LED display for speed and temperature.

RET® basic

LED	340°C
Max. stirring quantity (R.O.)	600 W
Heating plate material	20 l
Connection for ext. temp. sensor	–
Integrated temperature regulation	–
Control accuracy with external temperature regulation	–
Interface for external controls > Labworks®	–
Weighing, torque trend, pH	–
Firmware update tool	–
Protection class according to DIN EN 60529	IP 42

Optimized stirring and heating performance

Optimized stirring and heating performance with composite heating plate made of stainless steel or white ceramic coated. External temperature control is possible by connecting the included temperature sensor (PTS 1000). Digital LED display for speed and temperature.

RET® control-visc

high-res TFT	PT 100
Max. stirring quantity (R.O.)	400 W
Heating plate material	20 l
Connection for ext. temp. sensor	stainless steel / white ceramic
Integrated temperature regulation	PT 100
Control accuracy with external temperature regulation	± 0.2 K
Interface for external controls > Labworks®	–
Weighing, torque trend, pH	–
Firmware update tool	–
Protection class according to DIN EN 60529	IP 42

Optimized stirring and heating performance

Optimized stirring and heating performance with composite heating plate made of stainless steel or white ceramic coated. External temperature control is possible by connecting the included temperature sensor (PTS 1000). Digital LED display for speed and temperature.

Accessories



	Ident. No.	Price
① PT 1000.50*	0003367600	201,- EUR
Temperature sensor, dual, stainless steel, Ø 3 mm, 230 mm length		
② PT 1000.51*	0003377700	233,- EUR
Temperature sensor, dual, stainless steel, glass-coated, Ø 3 mm		
PT 1000.53*	0004498800	243,- EUR
Temperature sensor, dual, coated with SafeCoat, 230 mm length		
PT 100.50	0002607900	169,- EUR
Temperature sensor, dual, Ø 3 mm, 230 mm length		
③ PT 100.51*	0002600300	201,- EUR
Temperature sensor, stainless steel, glass-coated, Ø 8 mm, 230 mm length		
PT 100.53	0004497000	206,- EUR
Temperature sensor, stainless steel, coated with SafeCoat, Ø 8 mm, 230 mm length		
pH 5000.1	0002004404	on request
pH sensor, pH 0-14, BNC connector, 1 m cable		
①		
②		
③		
④		
⑤		

	Ident. No.	Price
① H 1000	0004444401	274,- EUR
Beaker, stainless steel, 1 L, inner Ø 160 mm, 79 mm height		
② H 1500	0004444501	265,- EUR
Beaker, stainless steel, 1,5 L, inner Ø 140 mm, 160 mm height		
③ H 3000	0004444601	266,- EUR
Beaker, stainless steel, 2 L, inner Ø 180 mm, 119 mm height		
④ H 5000	0004444505	329,- EUR
Beaker, stainless steel, 5 L, inner Ø 220 mm, 142 mm height		
⑤ H 8000	0004444508	503,- EUR
Beaker, stainless steel, 8 L, inner Ø 265 mm, 162 mm height		

* Only available for RET® control-visc



	Ident. No.	Dimensions	Ident. No.	Price
①	H 135.10	160 x 160 mm	0025000812	99,- EUR
H 135.10	160 x 160 mm	17.5 mm	0025000813	37,- EUR
H 135.102	Block 16 x 16 mm	17.5 mm	0025000817	40,- EUR
H 135.103	Block 9 x 16 mm	20.5 mm	0025000818	40,- EUR
H 135.104	Block 4 x 20 mm	28.5 mm	0025000820	34,- EUR
H 135.105	Block 4 x 30 mm	28.5 mm	0025000821	40,- EUR
H 135.106	Block 4 x 40 mm	28.5 mm	0025000822	45,- EUR
H 135.107	Block 100 mm	—	0025000823	36,- EUR
H 135.108	Block 250 mm	—	0025000824	42,- EUR

	Ident. No.	Dimensions	Ident. No.	Price
①	H 100.50	100 ml	0025000830	201,- EUR
H 100.50	100 ml	142 mm	0025000834	87,- EUR
H 100.50	100 ml	—	0025000836	20,50 EUR
H 100.50	100 ml	—	0025000837	20,50 EUR
H 100.50	100 ml	—	0025000838	20,50 EUR

	Ident. No.	Max. Outer Ø	Inner Ø	Ident. No.	Price	
①	H 135.20	Flask carrier 100 ml without handle	142 mm	—	0025000839	99,- EUR
H 135.20	Flask carrier 100 ml without handle	—	66,3 mm	0025000841	46,- EUR	
H 135.20	Flask rlay 100 ml	—	88 mm	0025000842	47,- EUR	
H 135.20	Flask rlay 250 ml	—	—	0025000843	144,- EUR	
H 135.20	Flask rlay 500 ml	—	108 mm	0025000844	81,50 EUR	

	Ident. No.	Dimensions	Ident. No.	Price		
②	H 135.30	Flask 400 ml without handle	194,7 mm	—	0025000834	178,- EUR
H 135.30	Flask 400 ml without handle	—	131,8 mm	0025000845	119,- EUR	
H 135.30	Flask rlay 1000 ml	—	—	0025000846	258,- EUR	
H 135.30	Flask rlay 3000 ml without handle	218,3 mm	—	0025000839	258,- EUR	
H 135.30	Flask rlay 5000 ml	—	162 mm	0025000848	189,- EUR	

	Ident. No.	Dimensions	Ident. No.	Price		
③	H 135.40	Flask 4000 ml without handle	194,7 mm	—	0025000834	178,- EUR
H 135.40	Flask 4000 ml without handle	—	131,8 mm	0025000845	119,- EUR	
H 135.40	Flask rlay 5000 ml	—	194,5 mm	0025000851	331,- EUR	
H 135.40	Flask rlay 5000 ml	—	—	0025000836	389,- EUR	

	Ident. No.	Dimensions	Ident. No.	Price		
④	H 135.50	Flask heating block series	194,7 mm	—	0025000839	206,- EUR
H 135.50	Flask heating block series	—	131,8 mm	0025000841	20,50 EUR	
H 135.50	Flask heating block series	—	—	0025000842	20,50 EUR	
H 135.50	Flask heating block series	—	—	0025000843	144,- EUR	

	Ident. No.	Dimensions	Ident. No.	Price		
⑤	H 135.60	Flask heating block series	194,7 mm	—	0025000839	206,- EUR
H 135.60	Flask heating block series	—	131,8 mm	0025000841	20,50 EUR	
H 135.60	Flask heating block series	—	—	0025000842	20,50 EUR	
H 135.60	Flask heating block series	—	—	0025000843	144,- EUR	



Stirring bars

①	Ident. No.	Dimensions Ø x D	Price
①	0004488600	10 x 6 mm	6,- EUR
②	0004487700	15 x 6 mm	6,40,- EUR
③	0004488700	20 x 6 mm	6,40,- EUR
④	0004488800	25 x 6 mm	7,- EUR
⑤	0004489000	30 x 6 mm	8,10,- EUR
⑥	0004489100	40 x 6 mm	9,80,- EUR
⑦	0004489200	50 x 6 mm	11,70,- EUR
⑧	0004489300	80 x 10 mm	28,- EUR
⑨	0004492200	25 x 8 mm	11,80,- EUR
⑩	0004492300	30 x 8 mm	11,80,- EUR
⑪	0004512600	40 x 8 mm	13,- EUR
⑫	0004492800	50 x 8 mm	14,- EUR
⑬	0004493000	75 x 9 mm	18,60,- EUR
⑭	0004493200	30 x 12 mm	28,- EUR
⑮	0004493400	50 x 21 mm	34,- EUR

Lifts

LABLIFT m	0004022400	198,- EUR
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Other accessories

①	Ident. No.	Price	
①	H 16 V	0001541100	47,50,- EUR
②	Support rod, Ø 10 mm, 450 mm length		
③	H 16.1	0000500500	12,80,- EUR
④	Extension for support rod		
⑤	H 44	0002437700	21,- EUR
⑥	Boss head clamp		
⑦	H 3B	0003547700	21,- EUR
⑧	Holding rod		

YOUR BENEFITS

IKA stainless steel vessels ensure:

- > Optimized heat transfer
- > Outstanding magnetic adhesion and
- > Safe handling of highly temperature sensitive fluids

IKA® offers more



Modern manufacturing

During manufacturing, IKA® focuses on high quality, not only with well-trained and experienced personnel, but also with standardized processes and quality checks.

The assembly of the printed circuit boards is fully automated and includes an automated 100% quality control check of every PCB.



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Should you not find the appropriate device in our standard product range, please send us your requested specifications through the online form. Our team will determine its feasibility and offer a solution to you.

Please visit www.ika.com/customizingcenter to review already implemented product modifications.



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Our dedicated team of engineers provides comprehensive worldwide technical service. Please feel free to contact IKA® directly or your dealer in case of any service questions.

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IKA® Application Support

Our Application Center spans 400sqm and offers modern facilities for presenting and testing lab devices and processes. This brings us even closer to our customers and improves our service. Here, prospective buyers and customers can test processes that involve stirring, shaking, dispersing, grinding, heating, analyzing and distilling.

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Prices valid until December 31st, 2014
Subject to technical changes and
alteration of prices



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