

IKA

designed for scientists



RET basic

/// Bảng dữ liệu

RET basic

The new benchmark for digitalization, laboratory safety and efficiency

The new IKA RET basic magnetic stirrer sets a new industry standard. As the currently smallest magnetic stirrer with 800 W heating power and a maximum temperature of 340°C, it combines uncompromising safety, outstanding robustness and maximum efficiency with intuitive and effortless operation.

Designed for seamless integration into networked laboratory infrastructures, the RET basic is equipped as standard with integrated WLAN and LAN interfaces. This makes it the ideal solution for digitalization and documentation projects in which devices need to be centrally networked, monitored, controlled or integrated into software systems.

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Tùy thuộc vào những thay đổi về mặt kỹ thuật





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Solid and compact design – manufactured for process reliability

The high IP54 protection class and the solid die-cast aluminum housing reliably protect the device from liquids, aggressive vapors, and mechanical influences – for trouble-free continuous operation even under harsh laboratory conditions. The compact design (only 160 x 200 x 100 mm) saves valuable space in the fume hood, fits on almost any laboratory lifting platform, and enables flexible, parallel test setups. This means users benefit from greater safety, greater efficiency, and more freedom in their everyday laboratory work.

Made in Germany

RET basic is manufactured in Germany in a fully automated production facility using state-of-the-art robot systems. This guarantees the highest quality and absolute reliability for maximum safety and a long service life.

New heating plate, more functionality

The RET basic is optionally available with a coated (anodized) heating plate. The high-quality anodized coating provides reliable protection against scratches and a wide range of chemicals. This means that the heating plate remains in perfect condition, both visually and functionally, even after prolonged use. The aluminum substrate ensures homogeneous temperature distribution and rapid energy transfer to the sample vessel.

For the first time, the RET basic comes with integrated menu functionality, which significantly expands the range of functions—□for example with timer functionality. This also enables the integration of wireless temperature sensors (accessories required).

The freely programmable timer starts either immediately or after the target temperature has been reached and signals the end of the process with an acoustic signal. You decide whether the heating and/or stirring should be switched off.

Performance and Efficiency

The brushless EC motor and high-quality magnets ensure excellent magnetic coupling at up to 1700 rpm. The insulated and thus energy-optimized heating plate has an output of 800 W and enables heating rates of up to 9 K/min. The heating rate can be adjusted in four stages – for slow, gentle, or fast heating depending on the application.

The user determines what is safe

For decades, IKA has followed the approach that the safety temperature specified by the user must be set consciously and independently of setpoints using a tool. A new feature is the monitoring of the medium temperature.

IKA is thus one of the few manufacturers that not only fully complies with the EN IEC 61010-2-010 laboratory equipment standard for heated devices, but even exceeds it in many respects. Safety is not only certified by a CE declaration, but also independently tested and certified by TÜV Süd according to the internationally recognized NRTL standard – the same safety standard followed by UL and CSA.

The customizable 14-segment glass display gives the user complete freedom: you decide which parameters are relevant for your application and can display them permanently – whether speed, temperature, pH value, or timer. In combination with the PT.Wireless and ETS-D7 wireless sensors, the RCT/RET even becomes a fully-fledged pH meter. This saves space, reduces investment, and simplifies the test setup.

Safety through networking and digitization



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IKA takes safety to a new level – beyond pure device safety. In addition to the option of monitoring and controlling the RET basic via software (e.g. IKA Labworldsoft®) via the integrated RS232, USB, LAN or WLAN interface (communication via ASCII-based commands (Namur standard)), direct communication with IKA devices, e.g. the overhead stirrers (EUROSTAR), is now possible.

This can be a decisive safety advantage when tempering and mixing viscous samples using the RET basic as a pure heating plate, enabling unmonitored 24/7 operation. In this case, the device automatically detects when the stirring speed of the stirrer falls below a critical value and switches off the heating in this case. This actively protects not only the individual device, but the entire test setup.

Intelligent safety for the laboratory of the future

The new IKA RET basic offers a sophisticated, multi-level safety concept, innovative operation, and maximum flexibility—all with minimal space requirements and maximum "Made in Germany" quality. IKA takes safety one step further: intelligent networking and digitalization make not only individual devices but entire laboratory processes safer, more efficient, and more future-proof.

Safety features at a glance

1. Independent safety circuit according to EN IEC 61010-2-010

Two separate temperature sensors under the heating plate: one regulates the set temperature, the second monitors an individually adjustable safety limit (e.g. flash point). The setting is made mechanically directly on the device – independently of the process setpoint. This ensures maximum safety even with flammable liquids and in the worst-case scenario (e.g. broken glass).

2. Monitoring the temperature in the medium with the Delta-T safety function

A definable temperature difference to the medium setpoint ensures that if this is exceeded (due to an unexpected reaction or external heat source), the heating is switched off until restart (stirring remains active). This allows safe approach to critical temperatures without risking shutdown due to slight overshoots.

3. Detection of sudden temperature drops

The RET basic detects sudden drops in medium temperature (e.g. due to glass breakage or evaporation of the medium) and can—depending on the setting—switch off the heating permanently.

4. Detection of failure to increase temperature

If no temperature increase is detected despite the energy supply (e.g. incorrectly positioned sensor), the device automatically deactivates the heating.

5. Dual sensors for medium and carrier medium

Up to two temperature sensors (wired and wireless) can be connected – for redundant or spatially differentiated monitoring, e.g. of a carrier medium.

6. Temperature limits for medium and carrier



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Hard temperature limits for medium and carrier medium can be set in the software to prevent operating errors and dangerous conditions.

7. Warning of hot surface (> 50 °C)

A visual warning signals when the heating plate is hot—even when the device is switched off. This provides reliable protection against burns.

8. Combination with IKA contact thermometer (ETS-D5)

Combining with the ETS-D5 contact thermometer creates an additional, independent safety circuit. This also results in even better measurement accuracy and a clear display at the measuring point.

9. Combination with IKA wireless temperature sensors PT.Wireless and ETS-D7

The elimination of cables significantly reduces the risk of cable breakage and makes the entire test setup clearer and tidier.

10. Networked safety through communication with other IKA devices

The RET basic can communicate directly with IKA overhead stirrers (via interface or wirelessly). If the speed falls below a freely definable critical stirring speed, the device automatically switches off the heating. This ensures the safety of the entire test setup – not just that of the individual device.

11. Safe monitoring in the laboratory with the IKA Lab Assistant (app) – coming soon

The IKA Lab Assistant enables wireless monitoring within the laboratory – for maximum flexibility and control (accessories required).

12. "Always Stir" – stirring remains active in the event of a fault

In the event of errors or safety shutdowns, the stirring function remains active to prevent boiling delays and hot spots.

13. Robust, closed design (IP54) & die-cast aluminum housing

The almost completely enclosed housing is resistant to aggressive vapors and liquids. The aluminum ensures durability and mechanical safety.

14. Mechanical safety & construction

Two mounting points for tripod rods enable flexible, stable sensor and structure fixation without additional clamps.

15. Operating modes with access protection

The behavior after power-up and access to set-points can be specifically restricted to prevent unintentional status changes—for maximum process reliability and ease of use.

Phạm vi giao hàng

- RET basic
- Cảm biến nhiệt độ, thép không gỉ PT 1000.60



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- H 80
- IKAFLON 30 mm x 8 mm stirring bar
- IKAFLON 40 mm x 8 mm stirring bar
- Screw driver

Dữ liệu kỹ thuật

Số vị trí khuấy	1
Lượng tối đa cho mỗi vị trí khuấy (H ₂ O) [l]	20
Tải tối đa [kg]	25
Công suất đầu ra động cơ [W]	9
Nguyên lý động cơ	DC chổi than
Hướng quay	phải
Hiển thị giá trị tốc độ cài đặt	LED
Hiển thị giá trị tốc độ thực tế	LED
Kiểm soát tốc độ	Control knob (Rotating / Pressing)
Thang tốc độ [rpm]	50 - 1700
Độ chính xác tốc độ cài đặt [rpm]	10
ViewReplace 524	Replaced
Tự gia nhiệt bởi tốc độ khuấy tối đa (RT: 22°C / thời gian: 1 giờ) [K]	+15
Công suất gia nhiệt [W]	800
Hiển thị giá trị nhiệt độ cài đặt	LED
Hiển thị giá trị nhiệt độ thực tế	LED
Đơn vị nhiệt độ	°C
Phạm vi gia nhiệt [°C]	Nhiệt độ phòng. + Tự gia nhiệt - 340
Kiểm soát nhiệt	Control knob (Rotating / Pressing)
Độ phân giải màn hình [K]	0.1
ViewReplace 531	Replaced
Độ phân giải nhiệt độ cài đặt của đĩa gia nhiệt [K]	1
Kết nối đầu đo nhiệt độ ngoài	PT1000, ETS-D5, ETS-D7, PT wireless
Độ phân giải nhiệt độ của môi trường [K]	0.1
Nhiệt độ hoạt động tối thiểu (Với làm mát bên ngoài) [°C]	-20
ViewReplace 19	Replaced
Vật liệu đĩa gia nhiệt	hợp kim nhôm
Kích thước đĩa gia nhiệt [mm]	Ø 135
Tự động đảo chiều quay	optional (with IKA HUB)
Chế độ gián đoạn	optional (with IKA HUB)
Đo lường thay đổi độ nhớt	optional (with IKA HUB)
Máy khuấy	optional (with IKA HUB)
Hẹn giờ	Có
Hiển thị thời gian	LED
Phạm vi cài đặt thời gian [s]	1 - 5999
Đo pH	optional (with ETS-D7, PT wireless)
Chương trình	optional (with IKA HUB)
Cảm biến phát hiện trong mẫu	Có
ViewReplace 627	Replaced
PT 1000, DIN EN 60751 Kl. A [K]	≤ ± (0,15 + 0,002x T)
Độ lệch tốc độ (không tải, điện áp danh định, ở 1500rpm + 25°C) [%]	±2
Tốc độ gia nhiệt (1l H ₂ O trong H1500) [K/min]	9
Heat control accuracy of heating plate centre without vessel (at 100°C) [K]	±5
Độ chính xác kiểm soát nhiệt độ với PT1000 ngoài (500ml H ₂ O trong 600ml cốc, thanh khuấy 40mm, 600rpm, 50°C) [K]	±0.5
Độ chính xác kiểm soát nhiệt độ với ETS-D5 (500ml H ₂ O trong 600ml cốc, thanh khuấy 40mm, 600rpm, 50°C) [K]	±0.5
Heat control accuracy with ETS-D7 (500ml H ₂ O in 600ml beaker, 40mm stirring bar, 600rpm, 50°C) [K]	±0.2
Heat control accuracy with PT wireless (500ml H ₂ O in 600ml beaker, 40mm stirring bar, 600rpm, 50°C) [K]	±0.2
Kích thước (Rộng x Cao x Sâu) [mm]	160 x 100 x 200



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Khối lượng [kg]	2.3
Nhiệt độ môi trường cho phép [°C]	5 - 40
Độ ẩm tương đối cho phép [%]	80
Cấp bảo vệ theo tiêu chuẩn DIN EN 60529	IP 54
Giao diện RS 232	Có
Giao diện USB	USB-C
Giao diện WPAN	Có
Kết nối WiFi	Có
Giao diện Ethernet	Có
Điện áp [V]	220 - 230
Tần số [Hz]	50/60
Công suất vào [W]	820
Công suất nguồn chờ [W]	0.45