

Unlimited
Combinations



Betriebsanleitung

Operating instructions

Hei-SHAKE Unimax 1010

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research made easy

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About this document

This operating manual describes the features and operation of platform shakers, Hei-MIX Unimax 1010 type built from 2023 onwards.

The operating instructions are an integral part of the described device!

Typographic conventions

Standardized symbols, signal words and highlighting elements are used in this document to warn of hazards and to identify important information or rather special text contents.

Symbol	Signal word / explanation
	Warning symbols in combination with a signal word indicate dangers: DANGER
	Indicates an immediate dangerous situation. Failure to respect the indications will result in death or serious injury.
	WARNING
	Indicates a potential danger. Failure to respect the indications will result in serious injuries.
	CAUTION
	Indicates a potential hazard which, if not avoided, damage to property and minor to moderate injuries can occur.
	Mandatory signs are used to indicate important and useful information on handling a product.
	This information is used to ensure operational safety and to maintain the value of the product.
[GUI]	Parameter designations, display texts , and device labels are typographically highlighted in the text and in tables to facilitate their assignment on the device.
→	The arrow indicates specific instructions to be followed to ensure operational safety when handling the product.

Copyright protection

This document is protected by copyright and is intended for use by the purchaser of the product only.

No transfer to third parties, reproduction in any form, including excerpts, and by any means, as well as utilization and/or disclosure of the contents is permitted without the prior written consent of Heidolph Instruments GmbH & Co. KG. Any violation is subject to compensation for damage.

Notes on the product

Directives applied, product certification



CE marking

The device meets all requirements of the following directives:

- European Machinery Directive, 2006/42/EC
- EMC Directive, 2004/108/EC

California Residents

Important information for California residents regarding Prop 65. Please visit www.P65Warnings.ca.gov for more information.

Residual risk

The device has been designed and manufactured in accordance with the state-of-the-art standards at the time of development and the recognized safety regulations. During mounting and use, as well as during maintenance, repair and cleaning work, there are nevertheless certain residual risks associated with the described device.

These are identified and described at the appropriate points in this document.

Intended use

The described platform shaker in this document has been specially developed for the following tasks:

- Shaking
- Mixing
- Emulsifying
- Suspending
- Separating
- Dissolving
- Staining

The areas of application of the described platform shaker include chemical, biological and environmental-analytical laboratory and research applications, applications of basic research and comparable facilities.

Due to its design, the device in its delivery condition may only be used in analytical processes or in laboratory-like conditions in the food, cosmetics, and pharmaceutical industries as well as other comparable industries that manufacture products intended for consumption by humans or animals, or for use on humans or animals.

Any other use of this device is not considered as intended!

Reasonably foreseeable misuse

Additional measures may be necessary, and/or specific directives and safety regulations may have to be observed for use under conditions or for purposes deviating from the intended use. Corresponding requirements must be evaluated and implemented by the operator in each individual case.

Compliance with and implementation of all relevant directives and safety measures for the respective field of application is the sole responsibility of the operator.

All risks resulting from improper use are borne solely by the operator.

The device may only be operated by authorized and instructed personnel. Training and qualification of the operating personnel as well as ensuring that the device is handled responsibly are the sole responsibility of the operator!

Transportation

During transportation, avoid severe shocks and mechanical stresses that can cause damage to the device.

Keep the original packaging in a dry and protected place for later use.

Storage

Always store the device in its original packaging. To protect against damage and excessive material aging, store the device in an environment that is as dry, temperature-stable and dust-free as possible.

Recommended storage conditions:

- 5 °C – 31 °C up to 80 % rel. humidity
- 32 °C – 40 °C up to 50 % rel. humidity (decreasing linearly)

Acclimatization

After each transportation and after storage under critical climatic conditions (e.g. high temperature difference between inside and outside), allow the device to acclimatize at room temperature for at least two hours to prevent possible damage due to condensation before commissioning it in the place of use. If necessary, extend the acclimatization phase if the temperature differences are very high.

Make all supply connections (power supply, tubing) only after the device has been acclimatized!

Permissible ambient conditions

The device is **NOT** suitable for outdoor use! The device is **NOT** suitable for use in potentially explosive areas!

When used in corrosive atmospheres, the service life of the device may be reduced depending on the concentration, duration and frequency of exposure.

General safety instructions

- Before commissioning and using the device, familiarize yourself with all the safety regulations and occupational safety guidelines applicable at the place of use and observe them at all times.
- Only operate the device if it is in faultless technical condition. In particular, make sure that the device is free of visible damage.
- If there is missing or misleading information on the device or regarding occupational safety, contact the responsible safety specialist or our technical service.
- Only use the device in accordance with the regulations on intended use („Intended use“ on page 31).

Electrical safety

- Before connecting the device to the power supply, ensure that the voltage indicated on the rating plate matches the specifications of the local power utility company.
- Ensure that the power supply circuit provided is protected by means of a residual-current device (RCD).
- Only use the three-pole power supply cord supplied with the device (PH, N, GND).
- Always replace defective device fuses with fuses of the same type with identical performance features.
- Prior to each start-up, check that the device and the power cord are free from visible damage.
- Have repairs and/or maintenance work on the device carried out exclusively by an authorized electrician or by the technical service department of Heidolph Instruments.
- Always switch off and disconnect the device from the power supply, preventing reconnection, before carrying out maintenance work, cleaning, or repairs.

Data security

- The user is responsible for ensuring data security when transferring data between the described device and other devices.
- Only use secure networks for the data transfer and avoid use of critical infrastructure.
- Only use high-quality shielded data cables for the data transfer.
- For data transfer via a USB B connection, an industrial standard USB hub should be preferably used to ensure the most stable connection possible.

Operational safety

- Operate the device under a closed ventilated fume hood when working with potentially hazardous substances (see EN 14175 and DIN 12924).
- Do not make any unauthorized changes or modifications to the device!
- Only use genuine spare parts and accessories, or those expressly approved by the manufacturer!
- Rectify malfunctions or faults on the device immediately.
- Switch off and disconnect the device from the power supply, preventing reconnection, if it is not possible to eliminate the malfunction or rectify the fault immediately.
- Observe all other applicable regulations such as laboratory and workplace guidelines, recognized safety technology rules and special local regulations.

Occupational safety

- Always use the prescribed personal protective equipment (PPE) such as protective clothing, safety goggles, protective gloves, safety shoes, etc.
- Do not operate any other devices in the immediate vicinity of the device ...
 - which can generate electromagnetic fields in the frequency range between 9×10^3 Hz to 3×10^{11} Hz,
 - which generate emission or radiation sources in the frequency range 3×10^{11} Hz to 3×10^{15} Hz (in the optical spectral range wavelengths from 1,000 μm to 0,1 μm),
 - which generate ultrasonic or ionizing waves.
- Do not process any substances that could release energy in an uncontrolled manner (e.g. self-ignition).
- Do not process substances in which the energy input through mixing poses a danger.
- Wipe off any liquid that may have spilled on the device immediately.

Personal protective equipment (PPE)

The operating company must determine and provide the necessary PPE, depending on the respective application and the media and chemicals used.

The corresponding instruction of the personnel is solely within the operating company's responsibility.

Environmental protection

When processing environmentally hazardous substances, take appropriate measures to avoid hazards to the environment.

The evaluation of corresponding measures such as the marking of a hazardous area, their implementation, and the training of the relevant personnel is the sole responsibility of the operator!

Biohazard

When processing biohazardous substances, take appropriate measures to prevent hazards to persons and the environment, including:

- Instruction of the personnel regarding the necessary safety measures.
- Provision of personal protective equipment (PPE) and instruction of the personnel in its use.
- Marking of the device with a biohazard warning symbol.

The evaluation of corresponding measures such as the marking of a hazardous area, their implementation, and the training of the relevant personnel is the sole responsibility of the operator!

Other regulations

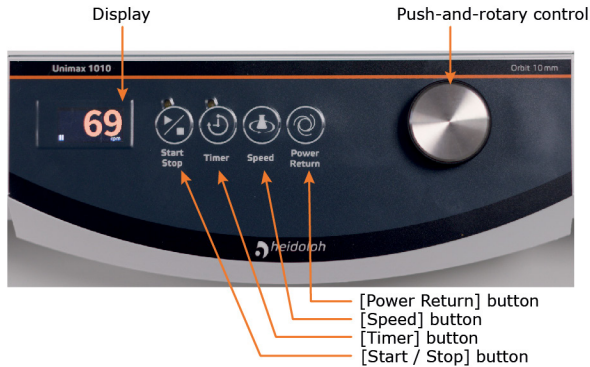
In addition to the notes and instructions in this document, observe all other applicable regulations such as laboratory and workplace guidelines, hazardous substances ordinances, recognized rules of safety engineering and occupational medicine as well as particular local regulations!



Noncompliance will invalidate any warranty claims against Heidolph Instruments.

The operator is solely liable for all damage resulting from unauthorized changes or modifications to the device, from the use of unauthorized or non-genuine spare parts and accessories, or from disregarding the safety instructions and hazard warnings or the manufacturer's instructions!

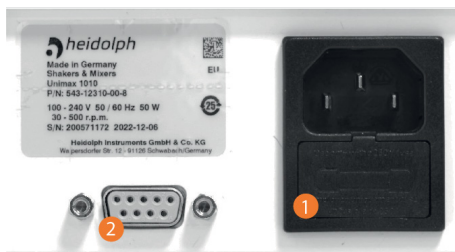
Mechanical design



Display elements and controls

Designation	Function
Display	Display of the operating parameters and messages.
Push-and-rotary control	- Rotary function: To adjust the operating parameters [Motor speed] or [Timer], see mode buttons [Speed] and [Timer]. - Push function: In remote mode, the connection to the external control unit is interrupted by pushing the control, to use the device again via the integrated control elements.
Mode button [Power Return]	Pushbutton to activate/deactivate the [Automatic restart] function.
Mode button [Speed]	Pushbutton to display/adjust the speed (shaking frequency) in Timer mode.
Mode button [Timer]	Pushbutton to activate the [Program timer] function: After pressing the button, the button LED lights up. In this operating state, the device timer can be programmed with the push-and-rotary control in a range from 1 min – 99 h 59 min.
[Start/Stop] button	Pushbutton to activate/deactivate the shaking function. The button LED lights up when the shaking function is activated.

Device connections, interfaces



Legend

1	Appliance inlet
2	RS232 interface (Sub-D, 9-pin) for activating the device in remote mode.

Set up the device



CAUTION

Improper installation of the device may result in direct and indirect damage to property due to falling and/or spilling of fluids!

Observe the instructions for the correct positioning of the device.

Observe the generally valid rules for the safe installation of work equipment.

- The surface must be even, non-slip, proper and sufficiently stable.
- The device must be freely accessible at all times.
- Make sure that a sufficient safety distance to moving components (platform) can be maintained on all sides.



The professional mounting and positioning of the device including the supplied accessories is within the sole responsibility of the operator!

Heidolph instruments accepts no responsibility for direct and/or indirect personal injury or damage to property resulting from failure to observe the instructions for the correct mounting and positioning of the device.

Power supply



DANGER

The device may only be supplied with the required mains voltage via a grounded mains socket-outlet (voltage see rating plate).
Only use the supplied power supply cord (hot condition connector).

Connect the power supply cord

- Before connecting the power supply cord, make sure that the main switch of the device is in position **0** (off).
- Connect the cable coupling of the supplied cord to the IEC appliance inlet on the back of the device.
- Connect the power supply cord to a properly secured power socket.

Disconnecting the power supply cord

- Before disconnecting the power supply cord, switch off the device.
- Disconnect the power supply cord from the power socket.
- Disconnect the power supply cord from the IEC appliance inlet on the back of the device.

Attachments

Use the various optional attachments to fix your laboratory vessels. Please observe the relevant information and instructions in the appendix to this document.

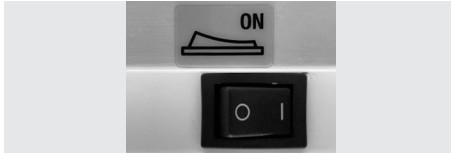


At low shaking frequencies, vessels such as Petri dishes can also be placed directly on the non-slip contoured rubber mat.

- Always place individual vessels in the center of the shaking platform.
- Always distribute several vessels evenly on the shaking platform.

Switching the device on/off

- Use the main switch to switch the device on or off, see also section „Mechanical design“ on page 36.
 - During the start-up, the Heidolph logo appears for about two seconds on the device display, at the same time, all button LEDs light up.
 - As soon as the device is ready for use, the last set shaking frequency is shown in **rpm** and the button LEDs turn off.



Automatic restart

When the [Automatic restart] function is activated, the device switches on automatically upon return of the power supply after a power interruption and the speed is augmented to the last set value.



WARNING

Before activating the function, take appropriate measures to make sure that, in case of a possible unmonitored restart, no hazard for persons or risk of damage to property can occur.



In the as-delivered condition, the [Automatic restart] function is deactivated and has to be activated or deactivated manually.

The function can be activated and deactivated at any time, i.e. without interrupting a running process.

The evaluation of potential risks by a possible unmonitored automatic restart as well as of appropriate security measures is the sole responsibility of the user!

Activating the [Automatic restart] function

- Push the mode button [Power return] to activate the function.
 - The information **Power Return On** as well as the warning symbol for the automatic restart is shown on the display for about two seconds:



Operating behavior with automatic restart

When the power is restored after a power interruption, a warning signal is emitted for about one second, at the same time, the warning symbol for the automatic restart flashes for about three seconds.

After this warning time has expired, the motor speed is raised again to the previously set value!

The timer function has to be newly programmed and started manually after each power interruption.

Deactivating the [Automatic restart] function

- Push the mode button [Power return] to deactivate the function.
 - The information **Power Return off** as well as the warning symbol for the automatic restart is shown on the display for about two seconds:

Operating modes

The device can be used in continuous operation or with a timer (timer mode). Regardless of the selected operating mode, observe the following specific safety instructions:



WARNING

- Whenever possible, use closed vessels for processing corrosive, toxic or biohazardous substances and seal them safely.
- Increase the speed only gradually to the desired shaking frequency, especially with open vessels, and observe the fluid movements.
- Please note the maximum lifting capacity of the platform of your device, see section „Performance range/maximum load“ on page 45.
- Lower the shaking frequency or reduce the total load on the platform when the device starts to vibrate during operation.
- Always ensure that the vessels are evenly distributed on the platform.
- Pay particular attention to an even distribution of the weight load when vessels of different sizes and/or differently filled vessels are placed on the platform at the same time!
- Before switching on the device, make sure that all vessels are properly fixed on the platform.
- Use suitable attachments for the used vessels. Further information on available accessories can be found on our website at www.heidolph.com!
- Always use the necessary and appropriate personal protective equipment!

Continuous operation

In continuous operation, the shaking movement can be started and stopped as required via the button [Start/Stop] after switching on the device.

- Place the vessel(s) on the platform. Note the instructions in section „Attachments“ on page 38.
- Switch on the device (see „Switching the device on/off“ on page 39).
- Use the push-and-rotary control to set the required shaking frequency (motor speed):
 - The set value is shown on the device display.
 - The shaking frequency is immediately raised or reduced to the set value.



The shaking frequency can be adjusted at any time during operation. When setting and maintaining the shaking frequency, the numerical value is shown on the display in orange. As soon as the preselected shaking frequency is reached, the numerical value is shown on the display in white.

- Press the [Start/Stop] button to activate the shaking operation.
- Press the [Start/Stop] button again to deactivate the shaking operation

Timer mode

In timer mode, a specific period of time can be set for a continuous shaking movement.

- Place the vessel(s) on the platform. Note the instructions in section „Attachments“ on page 38.
- Switch on the device (see „Switching the device on/off“ on page 39).
- Press the [Timer] button briefly. As soon as the button LED lights up, a timer value in the range from 1 min – 99 h 59 min can be defined by means of the push-and-rotary control.
- Press the push-and-rotary control briefly to confirm and adopt the input value.
 - The set value and a hold sign (**ll**) are shown on the display.



When setting the timer, the numerical value is shown on the display in orange. After confirming the input value, the numerical value is shown on the display in white.

- Press the [Start/Stop] button to activate the shaking mode.
 - The timer starts automatically, the hold sign (**ll**) disappears.
 - The LEDs of the [Start/Stop] and [Timer] buttons light up.
 - The remaining time until the expiration of the programmed time period is shown as follows:
 - up to a remaining time of one minute in hh:mm;
 - from a remaining time of one minute in mm:ss.

- During the running timer mode, the actual shaking frequency can be shown and, if necessary, adjusted at any time via the [Speed] button.



When the shaking mode stops, the timer is also stopped but not reset:

- A hold sign appears on the display (II).
- The timer continues to run when the shaking movement is restarted, starting from the last count value.

After the expiration of the timer, the device generates an acoustic signal (three short notification sounds) and the button LEDs [Start/Stop] and [Timer] turn off.

- Press and hold the [Timer] button for at least three seconds to deactivate the function:
 - The device can continue to be used in continuous operation.
 - The LED of the [Timer] button disappears.

Adjusting the shaking frequency in timer mode

In timer mode, the shaking frequency (motor speed) can be adjusted at any time via the [Speed] button:

- Press the [Speed] button during the running timer mode.
- The actual shaking frequency is shown on the display.
- Use the push-and-rotary control to set the required shaking frequency (motor speed):
 - The set value is shown on the device display.
 - The shaking frequency is immediately increased or reduced on the set value.



The shaking frequency can be adjusted at any time during operation.

When setting and maintaining the shaking frequency, the numerical value is shown on the display in orange.

As soon as the preselected shaking frequency is reached, the numerical value is shown on the display in white.

Remote mode

Activating/deactivating remote access

To activate the remote access of the device, a message of type "SetTargetSpeed", "SetMotorState", "SetTimerValue" oder "SetTimerState" has to be sent. The content of the first message is ignored. Afterwards, the remote symbol appears on the display and remote commands are executed normally.

The remote access can be stopped by pressing the push-and-rotary control.

Interface commands, see section „RS232 (ASCII) interface commands“ on page 46.



WARNING

Secure the device in remote mode with a clearly visible warning sign and, if necessary, take further ambient-specific protective measures that protect against damage to property and injuries in the event of unexpected/unmonitored starting of the device.

Device activation via PC

The device can be addressed via the integrated RS232 interface via an external control.

The data interfaces enable activation of the device and recording of the process data in remote mode. This requires suitable software (e.g. Hei-CONTROL), which supports the set of commands stored in the device.

Device activation via server-based software

The device can be addressed via the integrated RS232 interface via a server-based software. If required, contact an authorized dealer or our technical service, see „In the event of material or manufacturing defects, the product will either be repaired or replaced free of charge within the warranty period.“ on page 51.



In remote mode, all local control elements with the exception of the [Start /Stop] button and the push function of the push-and-rotary control are deactivated:

- By pressing the [Start/Stop] button, the shaking mode can be stopped in remote mode.
- By pressing the push-and-rotary control, the external control is deactivated.

In both cases, external commands are ignored.

Troubleshooting

Failure	Cause	Possible remedy
Display remains dark after switching on	No mains voltage	Check if the on/off switch is in position ON
	Power supply cord defective	Check the power supply cord for damages/correct connection
	On/off switch in position OFF	Check building fuses
	Display defective	Check device fuses
LED of the [Start/Stop] button does not light up when the function is activated	Button LED defective	Contact Heidolph Sales or Service
LED of the [Start/Stop] button does not light up when the function is activated	Button LED defective	Contact Heidolph Sales or Service
Shaking movement stops	Motor overheat protection has tripped	Wait about 20 minutes and reduce the load on the shaking platform
	Electrical fault (no engine noise)	Contact Heidolph Sales or Service
	Mechanical defect (engine noise audible)	Contact Heidolph Sales or Service



In case of recurring errors please contact the responsible sales department or our technical service (see section „In the event of material or manufacturing defects, the product will either be repaired or replaced free of charge within the warranty period.“ on page 51).

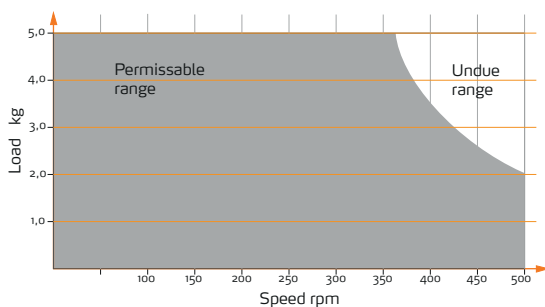
Error codes

Code	Description, remedy
E11	Motor driver error Switch off and on the device.
E12	Speed deviation between actual speed and nominal speed. ≥ 5 rpm or 10 % for at least 30 s. Switch off and on the device.
E13	Excess of the speed range for at least 5 s. Switch off and on the device.
E21	Temperature monitoring activation, sensor detects board temperature. ≥ 80 °C for at least 10 s. Switch off device, switch on device after cooling phase.
E22	Timeout remote control, no valid message for at least 10 s. Set command "Reset Communication".
E41	CRC error: calculated and stored CRC do not match. Switch off and on the device.

Technical specifications

Hei-SHAKE Unimax 1010	
Dimensions (W × H × D)	320 × 128 × 375 mm
Weight	9.25 kg
Permissible load	max. 5 kg
Usable area (W × D)	290 × 258 mm
Motion	orbital
Orbit	10 mm
Speed range	30 – 500 rpm
Drive	EC motor
Protection class	IP30 (acc. to EN 60529)
Protection class	I ⊕
Acoustic pressure	< 50 dB (A), in accordance with IEC 61010
Rated voltage	100 – 240 V, 50/60 Hz
Fuse	M 1.25 A (250 V)
Power input	50 W
Operating and storage temperature	5 °C – 31 °C at up to 80 % rel. humidity 32 °C – 40 °C at up to 50 % rel. humidity (decreasing linearly)
Installation altitude	up to 2,000 m asl

Performance range/maximum load



RS232 (ASCII) interface commands

GET VERSION

With [Get Version], the version information can be read out.

- Request: **STATUS [VERSIONTYPE] \R \N**
- Response:
 - Device Version: **STATUS DV= ID,VERSION,NAME,INFO \R \N**
 - Firmware Version: **STATUS FW= ID,VERSION,NAME,INFO \R \N**
 - Hardware Version: **STATUS HW= ID,VERSION,NAME,INFO \R \N**
 - Variant Version: **STATUS VV= ID,VERSION,NAME,INFO \R \N**

GET DEVICE STATE

With [Get Device State], the device state can be checked.

- Request: **IN PV ALL \R \N**
- Response:
 - **IN PV ALL**
 - TS [TARGET SPEED] ;** (read out motor target speed)
 - AS [ACTUAL SPEED] ;** (effective motor speed)
 - RH [TIME REMAINING HOURS] ;** (remaining hours)
 - RM [TIME REMAINING MINUTES] ;** (remaining minutes)
 - SH [TIME SET HOURS] ;** (set value hours)
 - SM [TIME SET MINUTES] ;** (set value minutes)
 - DOX [DEVICE] ;** (device state*)
 - EC [ERRORCODE] ;** (error code)
 - EL1 [ERRORCODELOG0] ;** (error history)
 - EL2 [ERRORCODELOG1] ;** (error history)
 - EL3 [ERRORCODELOG2] ;** (error history)
 - \R \N**

(* Device state: 0 = Init, 1 = PowerOn, 2 = AutoRestart, 3 = Idle, 4 = RunTime, 5 = RunPermanent, 6 = IdleRemote, 7 = RunRemoteSpeed, 8 = RunRemoteTime, 9 = Error)

SET TARGET SPEED

With [Set Target Speed], the target speed of the motor can be set. This command is only executed if the system is in remote mode.

- Request: **OUT_SP_3 [TARGET SPEED] \R \N**
- Response: **OUT_SP_3 [TARGET SPEED] \R \N**

SET MOTOR STATE

With [Set Motor State], the motor can be switched on and off. This command is only executed if the system is in remote mode.

- Request: **LED=2\r\n**
- Response: **START 2\R\n**

(**Set Motor State Stop** is used to switch off the motor.)

SET TIMER VALUE

With [Set Timer Value], the timer can be set to a value. This command is only executed if the system is in remote mode. By sending the command with the time 0 or 00:00 during operation, the timer ends and the motor continues turning until it is manually deactivated.

- Request: **OUT_SP_9\r\n**
- Response: **OUT_SP_9\r\n**

SET TIMER STATE

With [Set Timer State], the motor can be started or stopped for the set time. This command is only executed if the system is in remote mode.

- Request:
 - **OUT_MODE_9 1\R\n** (start timer or motor)
 - **OUT_MODE_9 0\R\n** (stop timer or motor)
- Response: **OUT_MODE_9\r\n**

SET AUTOMATIC RESTART

With [Set Automatic Restart], the automatic restart can be defined after switching on the device. This command is only executed if the system is in remote mode.

- Request: **OUT_MODE_2\r\n**
- Response: **OUT_MODE_2 [AUTOMATICRESTART] \R\n**

(0 = automatic restart deactivated, 1 = automatic restart activated)

SET CONNECTION CONTROL

With [Set Connection Control], the option [Remote Timeout Monitoring] can be activated or deactivated. In case of activation, the device quits the remote mode if it does not receive any messages over a period of ten seconds.

- Request:
 - **CC_ON\R\n** (activate Connection Control)
 - **CC_OFF\R\n** (deactivate Connection Control)
- Response:
 - **CC_ON\R\n** (activate Connection Control)
 - **CC_OFF\R\n** (deactivate Connection Control)

RESET COMMUNICATION

With [Reset Communication], a Remote Timeout Error can be reset. Afterwards, a remote connection can be established again.

- Request: **z\r\n**
- Response: **z\r\n**

GET ERROR STATE

With [Get Device State], the actual error state can be checked.

- Request: **No Error!\r\n**
- Response:
 - **ERROR EL1 [ERRORCODELOG0];**
 - ERROR EL2 [ERRORCODELOG1];**
 - ERROR EL3 [ERRORCODELOG2];\r\n**

SET MOTOR STATE STOP

With [Set Motor State Stop], the motor can be switched off. This command is only executed if the system is in remote mode.

- Request: **STOP_2\r\n**
- Response: **STOP_2\r\n**



The transmission of the messages is made via ASCII strings. The protocol is active after the start. By a defined ADIP "Connect" command, you can switch to the ADIP mode.

RS232 interface parameters

- 9600 Baud
- Parity: none
- Data: 8 Bit
- Stop: 1 Bit

Command termination

All ASCII strings have to be finished with \r\n (0x0D 0x0A):

- ...R/N

Scope of delivery

Item	Quantity	Product no.
Hei-MIX Unimax Vortexer	1	543 12310 -00 8
Power supply cord	1	country specific
Operating instructions	1	01-005-006-98
Warranty registration	1	01-006-002-78



Further information on available accessories can be found on our website at www.heidolph.com!

Device service

When carrying out service work on the device (cleaning, maintenance, repair), observe the general instructions and safety information described in this section.

DANGER

Electric shock



Live components are installed inside the device. When opening the device, there is a risk of touching live components.

Switch the device's main switch off and disconnect it from the power supply before carrying out maintenance work, cleaning, or repairs.

Penetrating liquid poses the risk of an electric shock.

When cleaning, avoid the penetration of liquids.

General cleaning instructions

Wipe all surfaces and the control panel with a damp cloth if necessary. Persistent contamination can be removed with mild soapy water.

CAUTION

Property damages



Improper cleaning can damage the surfaces of the device. Penetrating liquid can damage the electronic components inside the device.

Clean the device's surfaces with a soft, lint-free and only slightly moistened cloth.

Never use any aggressive or abrasive cleaning agents or aids.

Replace the device fuse

The fuse holder for the two device fuses is located on the rear of the device below the IEC appliance inlet.



DANGER

Electric shock

Before replacing the fuses, switch off the device and disconnect the power supply cord.

Always replace the two device fuses in pairs with original manufacturer fuses. Further information on available accessories can be found on our website at www.heidolph.com!

After fuse replacement, check the device for a safe condition according to IEC 61010-1.

Repairs

Repairs to the device may only be carried out by authorized experts!

Unauthorized repairs during the warranty period will result in the loss of the warranty claim.

The owner is solely liable for damage caused by unauthorized repairs.

If repairs are required, contact an authorized dealer or our technical service, see section „In the event of material or manufacturing defects, the product will either be repaired or replaced free of charge within the warranty period.“ on page 51.

Include the completed certificate of decontamination with every device return, see „Certificate of decontamination“ on page 52.

Maintenance

The device contains no user-serviceable components. If necessary (in the event of abnormal operating behavior such as excessive noise or heat generation, for example), contact our technical service, see section „In the event of material or manufacturing defects, the product will either be repaired or replaced free of charge within the warranty period.“ on page 51.

Disposal



- When disposing of the device, observe the provisions of the WEEE Directive 2012/19/EU and its transposition into national law in the country of use.
- When disposing of portable batteries, observe the provisions of the European Battery Directive 2013/56/EU and their implementation in national law in the country of use.
- Check the device and all components for residues of substances that are hazardous to health, the environment and biohazardous before disposal.
- Properly remove and dispose of residues of substances that are hazardous to health, the environment and are biohazardous!

Warranty statement

Heidolph Instruments GmbH & Co. KG provides a three-year warranty against material and manufacturing defects.

Glass and wear parts, transportation damage, and damage resulting from improper handling or non-intended use of the product are excluded from the warranty.

The warranty period for registered products begins on the date of purchase. Register the product with the enclosed warranty card or on our homepage www.heidolph.com.

For non-registered products, the warranty period begins with the date of the serial production (to be determined by the serial number).

In the event of material or manufacturing defects, the product will either be repaired or replaced free of charge within the warranty period.

Contact information



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Local distributors

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