



PORTABLE HIGH-PERFORMANCE BIO-RESONATOR



Art. no. 20120

Rayocomp PS 10 med.

USER MANUAL

35 JAHRE

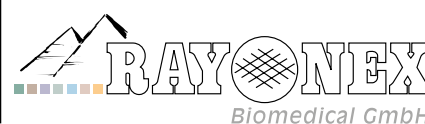


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1. The medical device Rayocomp PS 10

1.1. Intended use

The medical device Rayocomp PS 10 is a bioresonance device for the relief of pain in connection with cervical spine syndrome.



Please be advised that although the information, suggestions and possible solutions provided here are based on over 35 years of experience, they cannot replace a consultation with an physician. In addition, when using the Rayocomp devices, the advice of an experienced specialist in the respective field should be consulted during use! Since clinical studies are not yet available, it should not be used in pregnant women, nursing mothers, infants, children and adolescents.



There is no risk of danger if the device fails due to EM interference.



Illnesses that may be life-threatening always require a clear diagnostic clarification and its timely application by a specialist.

1.2. Conformity assessment



Rayocomp PS 10 is manufactured according to a quality control system approved by TÜV Nord, Essen, in accordance with DIN EN ISO 13485 and Appendix II of the Medical Device Directive (93/42/EEC).

1.3 Conformity declaration

The company Rayonex Biomedical GmbH declares conformity with the Medical Devices Directive (93/42/EEC) and that it has met the fundamental requirements in accordance with Appendix I for every device supplied. We are pleased to send you this declaration on request.

2. Basics of the Rayocomp PS 10

2.1 Scope of delivery

The scope of delivery contains:

1. The Rayocomp PS 10
2. Integrated polariser
3. Integrated power pack
4. Battery charger
5. User Manual
6. Transport case
7. Packaging board

It is absolutely necessary to keep the packing; in case you have to return the device for maintenance, please send it back in its transport case and the cardboard box. If you do not do so, we do not provide any guarantee.

If the old packing material gets lost, we can replace it on request, liable to costs.

When sending back the device, please make sure that all additional parts and accessories are secured inside the case! In case you intend to send back the PS 10, please always include the appurtenant charging set.

2.2. Technical data

Weight of the Rayocomp PS 10:	1.6 kg
Weight including case and accessories:	9.7 kg
Height:	100 mm
Width:	160 mm
Depth:	260 mm
Power supply for charging:	100 – 240 V / 50 – 60 Hz alternating current, 4.8 V - 12 V / 0.8 V secondary direct current
Max. reception capacity for charging:	24 w
Battery:	7,2 V
Operation time with a fully charged power pack:	8 hours (at least)
Range of the operation temperature:	10 - 40 °C

Protection type IP21:

Protection against penetration of solid foreign bodies with a diameter
> 12,5 mm

Protection against vertically dripping water

2.3 Instructions for use of the manual



Please read the instructions for use carefully!
Please heed all warnings and instructions, and follow them exactly.

Warnings in this document

Warnings contain security-related information. You will find warnings in the Warning and Safety Information section, as well as before the steps in the procedure that pose a risk to people or objects.



Hazards

Indicates an imminently hazardous situation which, if not avoided, results in death or serious injury.



Warning

Indicates a potential hazardous situation which, if not avoided, could result in death or serious injury.



Caution

Indicates a potential hazardous situation which, if not avoided, could result in minor or light injuries.

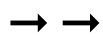


Note

Indicates useful tips for the procedure.



Type and source of the hazard



Measures/preventions

2.4 General advice and safety instructions

The following warning and safety information applies to general use of the device.

Risk of electric shock



Warning – Mains voltage

- Risk of electric shock when plugging cables into an electrical outlet.
 - → To avoid electric shock, cables must not be plugged into an electrical outlet.
 - → The device must be set up in such a way that the battery charger is always accessible, to ensure a safe mains separation.
 - → The PS10 charger may only be operated in a dry environment.
-



Warning – Insulation fault

- Risk of electric shock in case of damaged insulation of the device and the accessories.
 - → The device must be set up in such a way that liquids cannot penetrate the device or charger.
 - → If liquid does penetrate the device, the mains plug must be immediately plugged out and the device should be sent to the manufacturer for testing.
 - → Do not use cables with damaged insulation.
 - → The PS 10 may only be operated with accessories approved by the manufacturer and listed in the documents accompanying the PS 10.
-



Warning – Grounding fault

- Risk of electric shock when plugging cables into exposed conductive parts are not grounded or in case of unintentional grounding.
 - → The device must be connected with the delivered power supply.
 - → The power supply provided must only be connected to a power outlet with a protective earth.
 - → When the client is connected to the device, the detectors must not be placed on top of grounded objects (e.g. radiators), because this will lead to unintentional grounding of the client.
-



Warning – Unintentional currents and leakage currents

- There is risk of an electric shock or thermal injuries due to unintentional currents and leakage currents. The client must be insulated against all conductive parts.
- → All unused cables should remain unplugged during and after use to prevent the client/operator from getting an electric shock.
- → Prevent any persons, especially children, from poking sharp metal objects into the device.
- → To completely disconnect the power supply, the mains plug must be plugged out of the earthing contact outlet because while the device may be switched off, it is still connected to the mains voltage.
- → Contacts of the charger connection must not be touched simultaneously with the patient.
- → The device must not be operated in conjunction with a multiple socket. The use of multiple sockets can lead to leakage currents being exceeded.



Warning – Damaging the display

- Mechanical damage to the display can cause a weak caustic fluid to leak out the device, which may cause injury.
- → To avoid injury from a damaged display, avoid any contact with skin and eyes.

Risks associated with the device and accessories



Warning – Incompatible accessories

- Using incompatible accessories can harm the client/operator and damage the product.
- → Use only Rayonex-approved accessories on the device and detectors.
- → Use only Rayonex-approved accessories and those listed in the accompanying documents.
- → The device may only be connected to the supplied charger.



Warning – Damaged device and accessories

- Using a damaged device/accessories, from a device/accessories that does not work properly or reusing disposable products, may result in electric shock, mechanical/thermal injury or infection of the client or operator.
 - → If the device or the components (housing, cables, charger) are damaged, the device should be taken out of operation.
 - → Do not use cables with damaged insulation.
 - → Avoid falls or blows in order to prevent damage to the device.
-

Operator-related error prevention



Hazard – Safety tests

- To ensure optimum performance and electrical safety, regular safety-related checks need to be performed on the device.
 - → No regular service intervals are required for the Rayocomp PS 10. This is based on the self-tests which the Rayocomp PS 10 performs automatically at each start. A periodic performance of safety-relevant tests regarding e-impedance, leakage currents, dielectric strength as well as visual inspection according to IEC 62353 must be planned by the operator himself and carried out by an authorized company.
 - → The device should only be opened by the manufacturer to guarantee its safety. Repairs, servicing or maintenance must only be performed by the manufacturer.
-

Risks related to environmental conditions



Warning – Not using the device in the intended environmental conditions

- Not using the device in the intended environmental conditions can negatively affect the basic safety of the device and give client/operator an electric shock or cause mechanical/thermal injury to the client/operator and damage the device.
 - → The device should be checked for transport damage before startup.
 - → The device should not be exposed to great thermal fluctuations, otherwise you run the risk of condensation build-up inside. If the device cools down considerably (temperature under 5°C) e.g. after transport, or has been exposed to high humidity, make sure it is sufficiently acclimatized within the specified operating temperature range before switching it on again.
 - → The device should not be used in oxygen-enriched environments. To avoid electric shock, cables must not be plugged into an electrical outlet.
 - → Prevent any persons, especially children, from poking sharp metal objects into the device.
 - → To completely disconnect the power supply, the mains plug must be plugged out of the earthing contact outlet because while the device may be switched off, it is still connected to the mains voltage.
-



Warning – Suffocation

- There is a risk that children put the patient cable around their neck while playing and then step on the cable or get stuck with the cable -> the cable gets tightened, danger of suffocation.
 - → Cables must not lie around after use and children must not play with the device or accessories.
-

18.6.1 General information



Please be advised that although the information, suggestions and possible solutions provided here are based on over 35 years of experience, they cannot replace a consultation with a physician. Furthermore, the advice of an experienced specialist in the respective area should be consulted during treatment with the Rayocomp devices! Since clinical studies are not yet available, it should not be used in pregnant women, nursing mothers, infants, children and adolescents.



There is no risk of danger if the device fails due to EM interference.



Illnesses that may be life-threatening always require a clear diagnostic clarification and their timely treatment by a specialist.



The Rayocomp PS 10 does not have any performance features which, if they were to malfunction, would pose an unacceptable risk.



Videos (Rayonex Wiki) and training courses are offered to introduce the Rayocomp PS 10.



The Rayocomp PS 10 should not be serviced or undergo maintenance while being used on a client.



The presence of the Rayocomp PS 10 during application causes no known risks associated with mutual interference.



All connected devices (not in the direct vicinity of the client) must meet the requirements of EN 60950-1.



Repairs, servicing or maintenance must only be performed by the manufacturer. No action is required to ensure the long service life of the EMC.



The device should be kept away from other machines that emit HF interference.



Do not place anything on top of the device or put the device on top of any other equipment.



Non-original accessories can negatively affect EMC performance.



The device is not intended to be used with flammable anaesthetics and other flammable substances.
















The service life of the device is at least 10 years.



The service life of the accessories is at least 10 years.

2.5 Symbols used for Rayocomp PS 10

	Serial number
	Article number
	Manufacturer
	Year of manufacture
	Range of the operation temperature
	Relative humidity (non-condensing)
	Air pressure
	Follow instructions for use.
	Store in a location protected from sunlight.
	Keep dry.
IP21	Protection against penetration of solid foreign bodies with a diameter > 12,5 mm Protection against vertically dripping water
	Disposal of electronic devices (no household waste)
	Protection category II: Double insulation (e.g. plastic housing)
	Type BF applied parts (detectors)

2.6 Manufacturer's declaration of electromagnetic compatibility IEC 60601-1-2 for the Rayocomp PS 10

Guidelines manufacturer's declaration – Electromagnetic emissions for the device Rayocomp PS 10

The Rayonex Rayocomp PS 10 is intended for operation in an environment as described below. The user of the Rayocomp PS 10 must make sure that it is operated in this type of environment.

Emissions testing	Compliance	Electromagnetic environment – Guidelines
Radio frequency emissions (CISPR 11)	Group 1	The Rayonex Rayocomp PS 10 only uses high-frequency energy for its internal functions. Thus, it emits a low level of high-frequency energy and interference from electronic devices in the vicinity of the Rayocomp is unlikely.
HF emissions (CISPR 11)	Class B	The Rayonex Rayocomp PS 10 is suitable for operation in all environments, including residential building and facilities that are directly connected (without the use of a power transformer) to the same low-voltage network as residential buildings.
Harmonic current emissions (IEC 61000-3-2)	Class A	
Voltage fluctuations / Flicker (IEC 61000-3-3)	Is compliant	

Warning



- Between portable HF communication devices (radios) including their accessories such as external antennas and the Rayocomp PS 10 together with connected detectors, a minimum distance of 30 cm should be maintained. Non-observance can lead to a reduction in the performance characteristics of the device.
- → Maintain a minimum distance of 30 cm.

Warning



- Using this device directly next to other devices or with other devices in stacked form should be avoided, as this could result in incorrect operation. If it is nevertheless necessary to use it in the manner described above, this device and the other devices should be observed to ensure that they work properly.
- → Do not use directly next to other devices.
- → Do not use directly next to other devices in stacked form.


Guidelines manufacturer's declaration – Electromagnetic immunity
for the device Rayocomp PS 10

The Rayonex Rayocomp PS 10 is intended for operation in an environment as described below. The user of the Rayocomp PS 10 must make sure that it is operated in this type of environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – Guidelines
Electrostatic discharge (ESD) (IEC 61000-4-2)	± 8 kV Contact discharge	± 8 kV Contact discharge	Floors should be made of wood or concrete, or ceramic tiles. If the floor is made of synthetic material, the relative humidity must be at least 30%.
	± 2 kV, 4 kV, 8 kV, 15 kV Air discharge	± 2 kV, 4 kV, 8 kV, 15 kV Air discharge	
Electrical fast transient / bursts (IEC 61000-4-4)	Mains lines: ± 2kV 100 kHz repetition rate	Mains lines: ± 2kV 100 kHz repetition rate	The quality of the supply voltage must correspond to a typical hospital or business environment.
	Signal input / signal output: ±1 kV 100 kHz repetition rate	Signal input / signal output: ±1 kV 100 kHz repetition rate	
Surge voltages / surges (IEC 61000-4-5)	Line to line: ±1 kV	Line to line: ±1 kV	The quality of the supply voltage must correspond to a typical hospital or business environment.
	Line to ground: ± 2 kV	Line to ground: ± 2 kV	
Voltage drops, voltage interruptions (IEC 61000-4-11)	0 % UT; 1/2 cycle at 0, 45, 90, 135, 180, 225, 270 and 315 degrees	0 % UT; 1/2 cycle at 0, 45, 90, 135, 180, 225, 270 and 315 degrees	The quality of the supply voltage must correspond to a typical hospital or business environment. If the operator of the Rayonex Rayocomp PS 10 needs uninterrupted operation of the device in case of failure of the operating voltage, we recommend connecting it to an uninterruptible electricity supply.
	0 % UT; 1 cycle and 70 % UT; 25/30 cycles single-phase: at 0 degrees	0 % UT; 1 cycle and 70 % UT; 25/30 cycles single-phase: at 0 degrees	
	0 % UT; 250/300 cycles	0 % UT; 250/300 cycles	

Magnetic fields at the supply frequency of (50/60) Hz (IEC 61000-4-8)	3 A / m / 50 Hz	3 A / m / 50 Hz	Magnetic fields at the network frequency should correspond to the typical values to be found in hospital and business environments.
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Note: **UT** is the alternating mains voltage prior to application of test levels.

Conducted disturbances, induced by radio frequency fields. (IEC 61000-4-6)	3 V 0.15 MHz to 80 MHz 6 V in ISM and amateur radio frequency bands between 0.15 MHz to 80 MHz 80 % AM at 1 kHz	3 V 0.15 MHz to 80 MHz 6 V in ISM and amateur radio frequency bands between 0.15 MHz to 80 MHz 80 % AM at 1 kHz	Portable and mobile radio devices must not be used at distances from Rayocomp PS 10 (including its power line) of less than the recommended safety distance resulting from the respective transmission frequency equation.
High frequency electromagnetic fields (IEC 61000-4-3)	3 V/m 80 MHz to 2.7 GHz 80 % AM at 1 kHz	3 V/m 80 MHz to 2.7 GHz 80 % AM at 1 kHz	<p>Recommended safety distance: $d=1.2\sqrt{P}$</p> <p>$d=1.2\sqrt{P}$ 80 MHz to 800 MHz $d=2.3\sqrt{P}$ 800 MHz to 2.7 GHz</p> <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and D is the recommended separation distance in metres (m). The field strengths^a of stationary radio transmitter at all frequencies must be lower than the compliance level according to an on-site test.^b Near devices that bear this symbol, interferences are possible.</p> 

Guidelines manufacturer's declaration – Electromagnetic immunity
for the device Rayocomp PS 10

The Rayonex Rayocomp PS 10 is intended for operation in an environment as described below. The user of the Rayocomp PS 10 must make sure that it is operated in this type of environment.

Immunity test	High frequency electromagnetic fields in direct vicinity to wireless communication devices		
Immunity Test / modulation	Test frequency / radio service	Compliance level	Electromagnetic environment – Guidelines
27 V/m PM 18 Hz	385 TETRA 400	27 V/m PM 18 Hz	Portable and mobile radio devices must not be used at distances from Rayocomp PS 10 (including its power line) of less than the recommended safety distance resulting from the respective transmission frequency equation. Recommended safety distance: $d=1.2\sqrt{P}$ $d=1.2\sqrt{P}$ 80 MHz to 800 MHz $d=2.3\sqrt{P}$ 800 MHz to 2.7 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and D is the recommended separation distance in metres (m). The field strengths ^a of stationary radio senders at all frequencies must be lower than the compliance level according to an on-site test. Recommended separation distance between portable and mobile HF telecommunication devices and the Rayonex Rayocomp PS 10.
28 V/m for FM ± 5 kHz Hub 1 kHz Sine	450 GMRS 460, FRS 460	28 V/m for FM ± 5 kHz Hub 1 kHz Sine	
9 V/m PM 217 Hz	710 745 780 LTE Band 13, 17	9 V/m PM 217 Hz	
28 V/M PM 18 Hz	810 870 930 GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	28 V/M PM 18 Hz	
28 V/m PM 217 Hz	1720 1845 1970 GSM 1800, CDMA 1900, GSM 1900, DECT, LTE Band 1,3, 4, 25; UMTS	28 V/m PM 217 Hz	
28 V/m PM 217 Hz	2450 Bluetooth, WLAN 802.11 b/g/n, RFID 2450, LTE Band 7	28 V/m PM 217 Hz	
9 V/m PM 217 Hz	5240 5500 5785 WLAN 802.11 a/n	9 V/m PM 217 Hz	

→

			<p>The Rayonex Rayocomp PS 10 is intended for use in an electromagnetic environment, where RF disturbances are controlled. The operator of the Rayonex Rayocomp PS 10 can help reduce electromagnetic disturbances by maintaining a minimum distance of 30 cm between the Rayonex Rayocomp PS 10 and portable and mobile HF telecommunications devices (transmitters).</p>
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The following notes refer to the above tables.

Note 1: the higher frequency range applies at 80 MHz and 800 MHz.

Note 2: these guidelines may not apply in all cases.

Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

^a It is not possible to accurately predict the theory related to the field strength of fixed transmitters, such as base stations for wireless telephones and land mobile radios, amateur radio stations, AM and FM radios and TV sets. To assess the electromagnetic environment created by fixed transmitters, a study of the electromagnetic phenomena of the location should be considered. If the measured field strength in the location in which the Rayonex Rayocomp PS 10 is used exceeds the RF compliance level above, the device should be monitored to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as changing the direction or location of the Rayonex Rayocomp PS 10.

^b Over the frequency range 150 kHz to 80 MHz, field strengths should be below 3 V/m.

2.7 Guarantee

The warranty period runs for one year from the date of delivery on and is only valid for devices that have not been opened, with the intact guarantee seal as evidence. Improper use of the device invalidates the warranty claim.

2.8 Transport and storage conditions



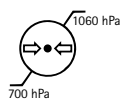
Transport conditions



Storage conditions



Humidity





Air pressure

2.9 Cleaning / Servicing



The surface of the device should be cleaned with a soft cloth and a small amount of alcohol once a week. Never treat the device with strong cleaning agents.

The detectors, which come into close contact with the clients (i.e. hand and foot detectors), need cleaning after every use - preferably with alcohol.

	When in contact with possibly contagious clients all general hygienic measures apply! In the event of possible contact of the device with infectious materials, an appropriately effective disinfectant must be used.
	Do not submerge the device in fluids or running water. Do not use liquid or gaseous cleansers (sprays, abrasives, polish, etc.). Do not allow fluids to reach the device or the battery charger. If fluids do reach the device, pull out the battery charger immediately!

No regular service intervals are required for the Rayocomp PS 10. This is based on the self-tests which the Rayocomp PS 10 performs automatically at each start.

If there is still a problem with the device, this will be shown in the display after the self-test. In this case, please contact the Rayonex Biomedical GmbH on the following number (+49) 27216006-0.

	It is necessary to check the device, accessories and also the connection cable (especially the charger) regularly for damages by visual examination. If damage to the body, accessories or cables is detected, the device may only be operated after a manufacturer's inspection.
	No modifications or changes may be made to the device!

2.10 Understanding the device

In the chapters of this user manual, you will often find instructions referring to keys or segments of the Rayocomp PS 10. In the following, you can see pictures of the device accompanied by short descriptions in order to simplify the assignment.

2.10.1 Front view



Caption:

- 1: Display
- 2: Keyboard
- 3: Three exit hubs for connecting the hand, foot or used detectors and the measuring and protection cups
- 4: Rayotensor connection. For a correct connection, please insert the Rayotensor plug and then fasten it by twisting the knurled screw.
- 5: Entry hub
- 6: Memory card insert

2.10.2 Rear view



Caption:

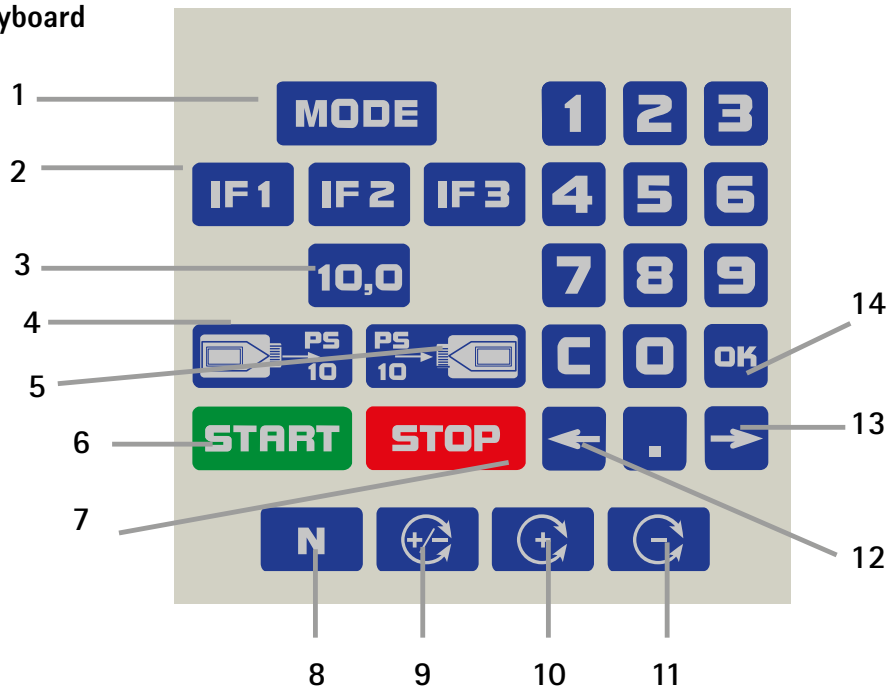
- 1: On/Off key
- 2: Charging socket
- 3: Interface for program updates

Rayocomp PS 10 Evolution:

The Rayocomp PS 10 Evolution was equipped with a specific hardware that enabled the use of the Rayonex Analysis and Harmonising System (RAH) with its module 10. An upgrade can be conducted any time and free of charge at Rayonex Biomedical GmbH.



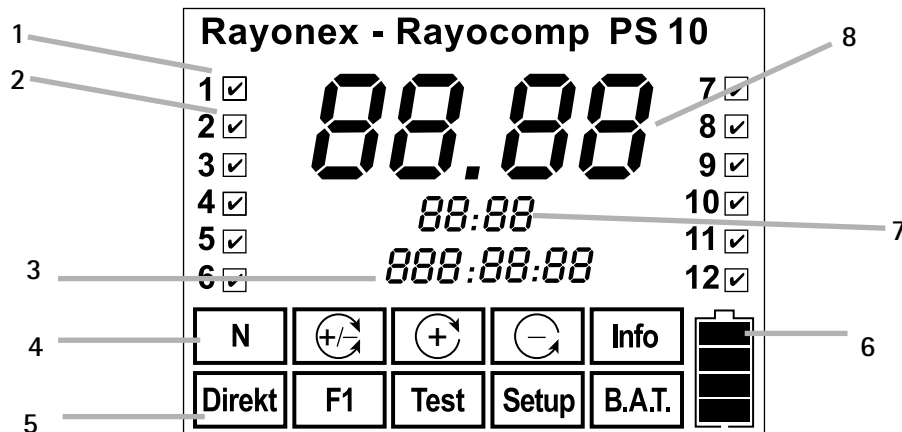
2.10.3 Keyboard



Legend:

- 1: "Mode" key for selecting the menu item
- 2: IF1 to IF3 keys: to save frequently used fundamental frequency values
- 3: 10.0 key for the rapid access to this value and for activating the test protocols / M10.
- 4: Key for loading the values from a memory card into the device
- 5: Key for storing values from the device on a memory card
- 6: Start key
- 7: Stop key for interrupting an automatic run or for deleting the function
- 8: N key of the polariser to switch the polariser to neutral
- 9: +/- key of the polariser to switch on the bipolar function
- 10: + key of the polariser to activate a polarisation rotating to the right
- 11: - key of the polariser to activate a polarisation rotating to the left
- 12: Arrow-left key, i.e. for selecting the RAH program during an automatic program course
- 13: Arrow-right key, i.e. for selecting the RAH program during an automatic program course
- 14: Numerical block for entering digits, numbers, C deletes, the decimal point indicates i.e. a program number (i.e. 01.00 Vitalisation).

2.10.4 Display



Legend:

- 1/2: Numbering the modules. All in all, the Rayocomp PS 10 is intended for the activation of twelve different modules. If the menu item "Info" is selected, it is displayed whether module 10 is already activated.
- 3: In the menu item "F1", you can read the remaining total harmonising time here.
- 4: This displays the polarisation type which is currently set.
- 5: Here you can read, which menu item has been selected.
- 6: This symbol shows you the charge status of the battery pack. If all four bars can be seen on the display, the accumulator is full. If no bar is indicated, the accumulator is empty.
- 7: During harmonisation with RAH-programs, the remaining duration of the harmonising appertaining to the current RAH-program will be shown at this place.
- 8: Here, for example, the currently set therapy program for reducing pain in cervical spine syndrome is indicated. We have selected a large numeral display for better reading comfort.

2.10.5 Accessories

Only accessories authorized by the company Rayonex Biomedical GmbH may be connected to the product. If you use accessories that are not authorised by Rayonex Biomedical GmbH, the device can be damaged or it may not perform its intended service.



The following accessories may be used with Rayocomp PS 10:

- "Green Card" (art. no. 359xx)
- Rayotensor with wooden handle (art. no. 362)
- Foot detector protected (art. no. 31800)
- Hand detectors protected (art. no. 31900)




The use of other accessories is not intended!

The metal detectors (foot and hand detectors) are connected to one of the outputs (3.10.1 Front view). Enclose the hand detectors completely with your hand and walk barefoot on the foot detectors when used optimally.

3.10.6 Disposal

Disposal information for private users:

Caution: your device bears this symbol: 

This means that at the end of their product life electrical and electronic devices must not be disposed of with household waste, but rather delivered to a separate collection system. By proper disposal you contribute to the appropriate collection, treatment and reuse of used devices. This prevents possible damaging effects on the environment and health due to improper disposal.

In the European Union:

Caution: do not dispose this device in the normal household garbage! According to the new EU directive that stipulates the proper collection, treatment and reuse of used electrical and electronic devices, used electrical and electronic devices must be disposed of separately. After the implementation of the directive in the EU member states, private households can now deliver their used electrical and electronic devices free of charge to the designated return points. In some countries used devices can also be turned in free of charge at the specialised dealer under certain circumstances if you purchase a comparable new device. You can receive further details from your municipal administration or the local disposal point.

In other countries outside of the European Union:

Please inform yourself at your community administration or the local disposal station about the proper procedure for disposal of this device.

2.10.7 Testing before use

The Rayocomp PS 10, the battery charger, the accessories and the connection cables should all undergo visual inspection to check for any damage. If there is any damage to the housing, accessories or wiring, the device may only be put back into operation after it has been checked by the manufacturer.

3. User manual

3.1 General Directions for Operation

3.1.1 Charging the integrated power pack

The Rayocomp PS 10 is equipped with an integrated battery pack to enable the application of the device without needing to connect it to the mains supply. Please ensure that the PS 10 is switched off before charging the battery. If for whatever reason the PS 10 is turned on while charging, a warning message will appear on the display (Er 50) and the device will emit a beep sound.

An empty battery pack requires approx. 4 hours for complete charging. In order to avoid unnecessary electro-magnetic pollution, please unplug the charging unit when it is not being used.

And this is how you charge the Rayocomp PS 10:

1. Switch off the device.
2. Connect the charging unit to the mains supply
3. Plug the charging cable into the rear of the device (see chapter 2.10.2)
4. The charging unit indicates the various charging processes. When the LED turns green, the charging process is complete and you can use the device again.
5. Please disconnect both the plug from the rear panel of the device and the charging set from the electrical outlet.



Function		yellow	green
Standby:	charging device in stand-by mode, ready to charge	glows	
Pre-charge:	tests whether charging is required	blinks slowly	
Rapid charge:	power pack is charged with constant current		blinks rapidly
Maintain:	charging power is reduced		blinks slowly
Error:	charging cannot start	blinks rapidly	
Ready:	the Rayocomp PS 10 is ready for use		glows
Wait:	charging device is not ready yet	blinks slowly	blinks slowly

Note: The charging status of the power pack is always displayed. This bar indicator allows you to estimate the length of time left for operation before it becomes necessary to recharge the device. The Rayocomp PS 10 cannot be charged during harmonisation.

3.1.2 Switching the device on and off

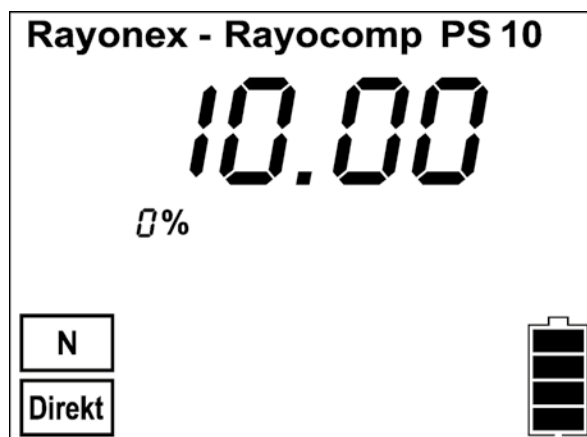
On the rear of the Rayocomp PS 10, you will find the key for switching the device on and off. When switching on, please make sure that no memory card is inserted in the device. In case your PS 10 is not under supervision for a longer period of time (overnight, for example), make sure that the power pack is charged sufficiently. **Total discharge, even if it happens only once, damages the power pack permanently.**



After the device is switched on, a short trial run is started.

A mechanical test is performed, along with a check of the power pack. If you receive the message "Er 29", the power pack must be recharged before you can work with the device. Then the device switches over to the menu item "Direct" and is immediately ready for action.

The display shows:



It is not necessary to move to a certain menu item before switching off the device. This means you can switch off the device at any time. Please keep in mind that the resonance values and the found RAH programs detected in the menu item "Test" are lost when the device is switched off. When the status of the power pack goes down until its functions can no longer be guaranteed, a 'blip' can be heard several times. **In this case, the power pack must be recharged immediately to avoid damage.**

Important information:

You cannot damage your device by switching it off arbitrarily. Neither will the integrated harmonising programs be lost nor will your hardware suffer damage.

3.1.3 Selecting the menu with the Mode key

The Rayocomp PS 10 has a selection of menu items. Every menu item provides certain application possibilities. Therefore, partitioning into single menu items serves as a means for simplifying operation. The following menu items are available:

1. Menu item **"Direct"**: Use this menu item to automatically harmonize a "Green Card" on which the harmonisation program for the relief of pain associated with cervical spine syndrome has been saved.
2. Menu item **"F1"**: Under the menu item "F1", the RAH program modules of the therapy program for the relief of pain in connection with cervical spine syndrome can be entered into the internal device memory of the Rayocomp PS 10, in order to either save them on a "Green Card" after entry or to use them directly for harmonisation.
3. Menu item **"Setup"**: With this menu item, you can alter pre-settings of the device, call up information concerning the memory cards, activate or de-activate modules and perform a device test.
4. Menu item **"Info"**: Select this menu item to gain information concerning the serial number of the device. It will also indicate the current state of the integrated software and the existing hardware. Particularly important: You can see directly, if module 10 is integrated in the Rayocomp PS 10.

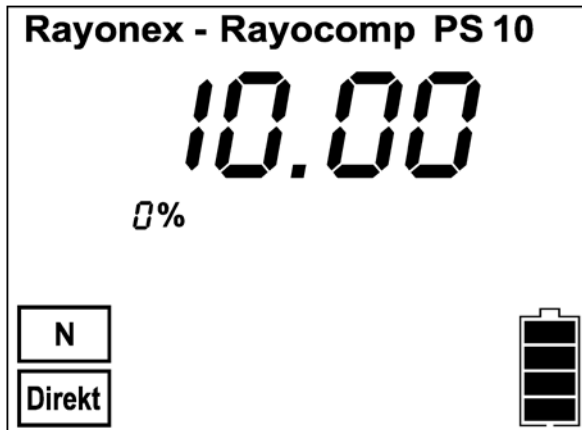
3.1.4 Start device and enter program sequence

In order to be able to use the therapy program for the pain relief in connection with cervical spine syndrome with the Rayocomp PS 10, the RAH module M10 must be enabled in the device.

When the Rayocomp PS 10 is switched on, the display of the device shows the menu item "Direkt":

Now press the key:

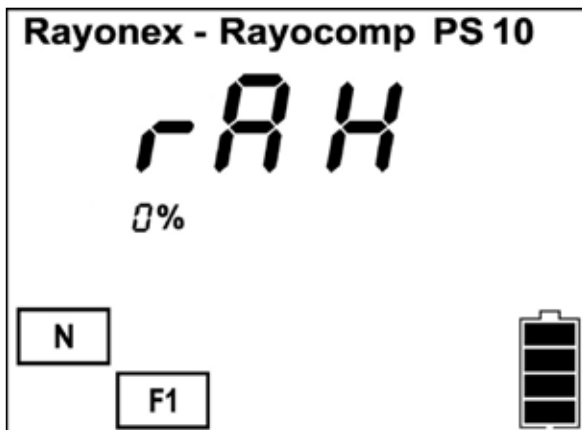
MODE



The Rayocomp PS 10 changes over to the menu item "F1-BaPS" and displays:

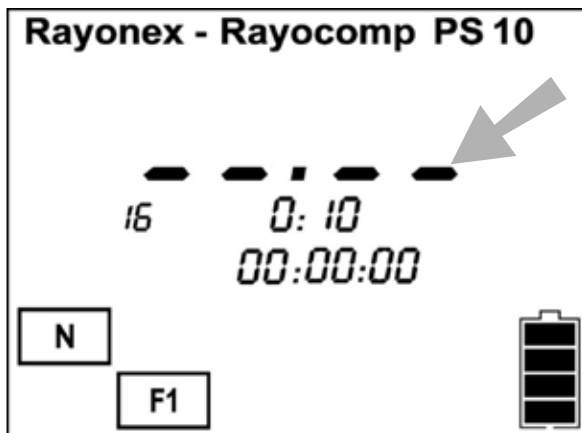
Once again, press the key:

MODE



By pressing the Mode key again, the Rayocomp PS 10 will switch over to the RAH module. However, this will only occur if the module 10 have effectively been activated.

This indication appears on the display:



The program number is entered here.

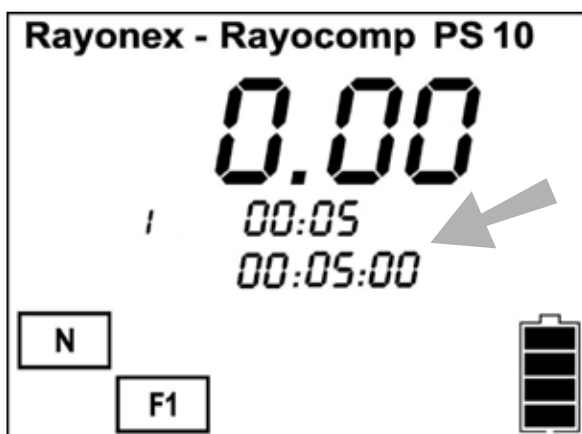
The PS 10 is waiting for the entry of a program number now. In this case the program "Analysis preparation" 00.00 should be selected.

To start the input with this program, press the following keys:



Press the "OK" button to confirm the entry.

The display for the individual harmonisation time (5 min) flashes. If the preset harmonization time of 5 min is to be maintained, confirm with "OK".

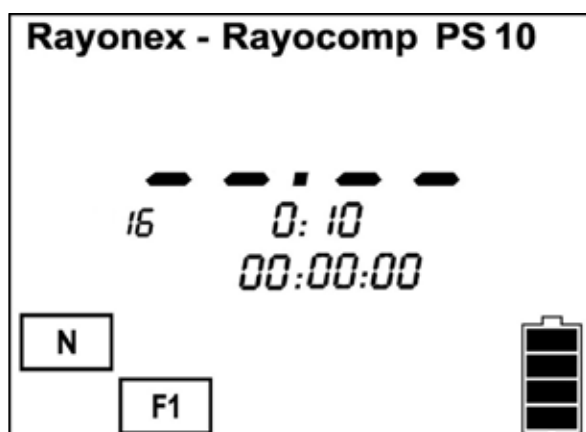


These values indicate the length of the harmonising time of the currently selected program and the total time needed for the programs already selected.

In this manner, enter the appropriate programs for relieving pain associated with cervical spine syndrome:

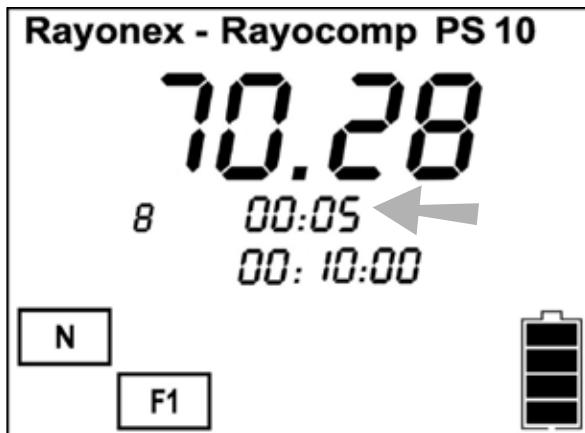
1. RAH 00.00 (5 min.)
2. RAH 01.00 (5 min.)
3. RAH 02.00 (5 min.)
4. RAH 31.10 (5 min.)
5. RAH 54.15 (5 min.)
6. RAH 54.31 (5 min.)
7. RAH 64.56 (5 min.)
8. RAH 70.28 (10 min.)
9. RAH 70.29 (10 min.)
10. RAH 70.40 (10 min.)
11. RAH 70.43 (10 min.)
12. RAH 70.46 (10 min.)
13. RAH 70.48 (10 min.)
14. RAH 70.58 (10 min.)
15. RAH 70.59 (10 min.)
16. RAH 71.50 (5 min.)
17. RAH 71.60 (5 min.)
18. RAH 01.00 (5 min.)

The following programs of the therapy program to relieve pain associated with cervical spine syndrome are again harmonized with 10.00 minutes:

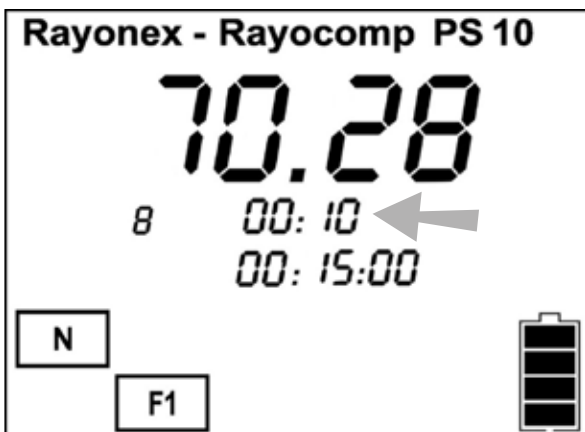


View harmonisation time 5:00 min.

Input of program 70.28 via keyboard.



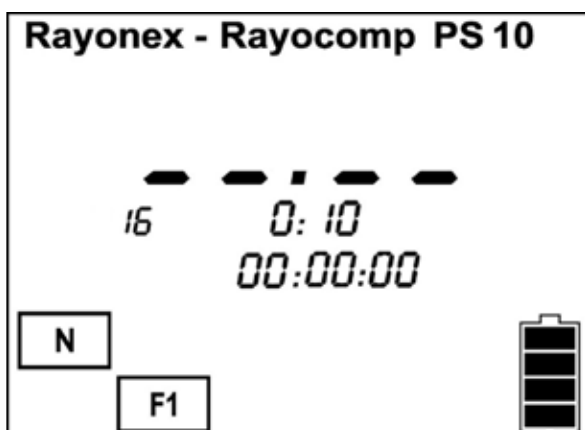
Use the arrow keys to change the harmonization time to 10 minutes.



In the same way, the programs

- 8.RAH 70.28
- 9.RAH 70.29
- 10.RAH 70.40
- 11.RAH 70.43
- 12.RAH 70.46
- 13.RAH 70.48
- 14.RAH 70.58
- 15.RAH 70.59

are entered with 10 minutes.



The following programs of the therapy program for the pain relief associated with cervical spine syndrome are then entered again as previously described (page 30) with a harmonisation time of 5.00 minutes:

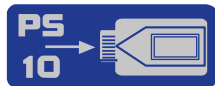
- 16. RAH 71.50
- 17. RAH 71.60
- 18. RAH 01.00

3.1.5 Saving programs on a "Green Card"

Now that all RAH programs from the cervical syndrome pain relief program have been entered, this program sequence should be saved on a "Green Card" for future harmonisations. This eliminates the time-consuming input of all individual RAH programs for the following applications.

The "Green Card" is inserted into the card slot.

By pressing the key:



the entered programs are stored on the card.

Starting the program

To start the therapy program for pain relief associated with cervical spine syndrome, press the key



All previously entered RAH programs for the pain relief associated with cervical spine syndrome are now automatically harmonized in the program sequence.

Pause function and premature termination of harmonisation

Press once to stop



the harmonisation.



can be used to restart harmonisation.

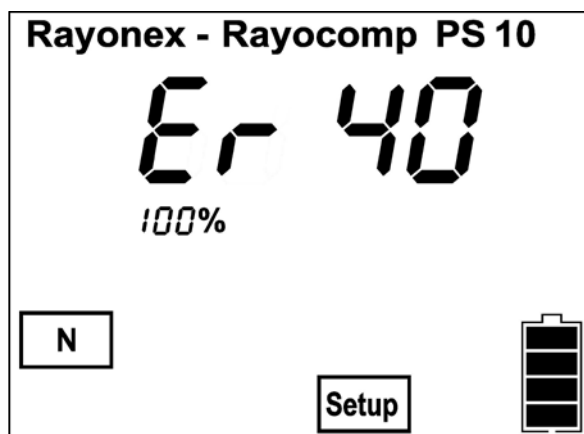
To stop harmonisation prematurely and reset the RAH module, the Stop button must be pressed twice.

3.1.6 Automatic program sequence when using a "Green Card" with program for pain relief associated to cervical spine syndrome

Under the menu item "Direct", a "Green Card", stored with RAH-programs, can be used for an automatic harmonising sequence. Our principal object is, that people, who want to use this device for harmonisation, can do this in a very simple way.

For the automatic program sequence under the menu item "Direct" you have to do the following:

1. Switch on the device and connect it with the detectors.
2. Insert the stored RAH "Green Card" into the memory card slot.
3. The Rayocomp PS 10 then displays "Er.40" and emits two long beeps



3. Pull out the card.
4. The automatic harmonisation of the RAH programs for pain relief associated to cervical spine syndrome starts.

After the programs have been set-up one after the other, the automatic harmonisation with the loaded RAH programs with their individual stored harmonisation times begins.

In the automatic harmonisation sequence of the RAH-programs, the display shows:



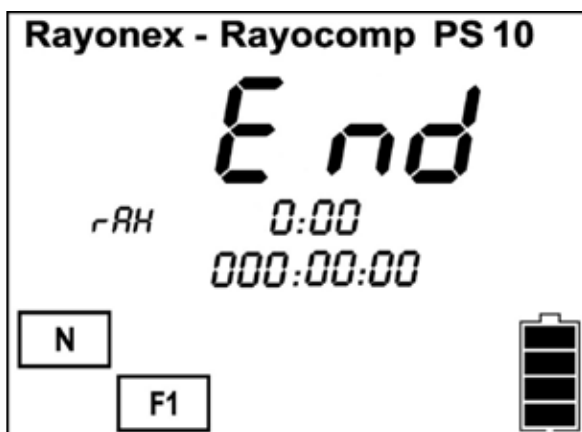
The display shows "rAH", so that you know immediately, that RAH-programs are being harmonised currently.

Note:

Here in the picture the 1st program (analysis preparation) of the therapy program for pain relief associated to cervical spine syndrome.

The program sequence of the entire therapy program is automatic.

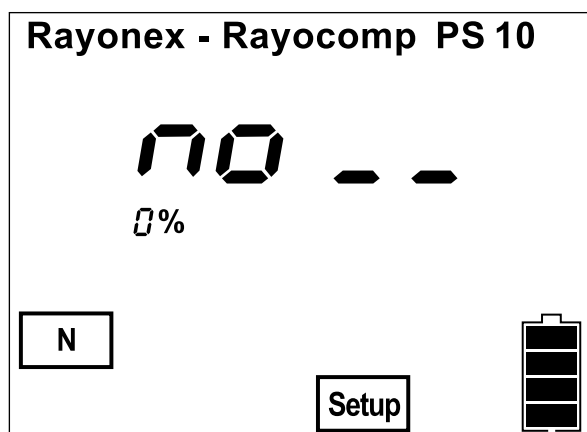
When the harmonization is finished, the following picture appears in the display and a signal tone sounds:



4. "Setup"

The menu item "Setup" was designed to adapt the Rayocomp PS 10 to your individual intentions by means of pre-settings. Available besides the alteration of pre-sets are test functions and important and useful functions in connection with memory cards.

Select the menu item "Setup" with the key **MODE**. The display shows:



At this stage, the device is waiting for a set-up number to address the desired set-up function. For example, if you want to enter the setup number 10, please press 1, then 0 and confirm your entry with the OK key. Further actions are described in the following sub-chapters.

To simplify orientation, the layout of the set-up numbers is large and marked in red in the corresponding sub-chapters.

Please note: You run no risk of ruining the device or deleting anything permanently if you alter the set-up. Every set-up of the device can be returned to its original state. Have courage and try it out. It is the best way to become familiar with your Rayocomp PS 10.

4.1 Set-up of background illumination

Setup Number: 10

For reasons of improved legibility, the display of the Rayocomp PS 10 was provided with background illumination. Because of this feature, the display remains perfectly visible, even if the light is dim. You can select one of three different types of background illuminations. Enter the set-up number 10 and you can add one of the following numbers:

- 0: Background illumination is permanently switched off.
- 1: Background illumination is permanently switched on.
- 2: Background illumination is set to automatic. 30 seconds after the last keyboard action, the background illumination is switched off. The background illumination turns on again as soon as the keyboard is used. This saves energy, the battery pack lasts longer. With this set-up, the background illumination is switched off at night if you are harmonising while you are resting. Your sleep is not disturbed by the bright light of the illumination in the background.

On delivery, the standard set-up of the Rayocomp PS 10 is number 2.

4.2 Adjusting the "Attention" sound (Beep)

Setup Number: 12

The Rayocomp PS 10 has been equipped with an acoustic signal. This may signalise e.g. the use of a wrong key or confirm an entry.

The Rayocomp PS 10 has three different error messages or acoustic signals:

1. **One long sound:** with this signal, the device confirms a successfully completed action, i.e. an entry or storage.
2. **Two short sounds:** The key you are pressing has no current function.
3. **Two long sounds:** This signalises a severe error. The device will supply an error code. In the appendix (Chapter 5.2), you can look up the current error.

This set-up function enables or disables the signal. Enter the set-up number 12 and you can add one of the following numbers:

- 1: The acoustic signal is switched on.
- 0: The acoustic signal is switched off.

On delivery, the standard set-up of the Rayocomp PS 10 is number 1.

4.3 Activating and Deactivating Modules

Setup Number: 20

After having entered the set-up number 20, you can select the number of the module (10) intended for activation or deactivation. (Please confirm each input with the OK-key.)

Here is the module number:

Module no.	Designation
10	Rayonex Analysis and Harmonising program (RAH), Module 10

Then please enter a seven-digit activation code, which you will receive from Rayonex, for activation or deactivation and confirm it with the **OK** button.

4.4 Displaying Memory Card Information

Setup Number: 40

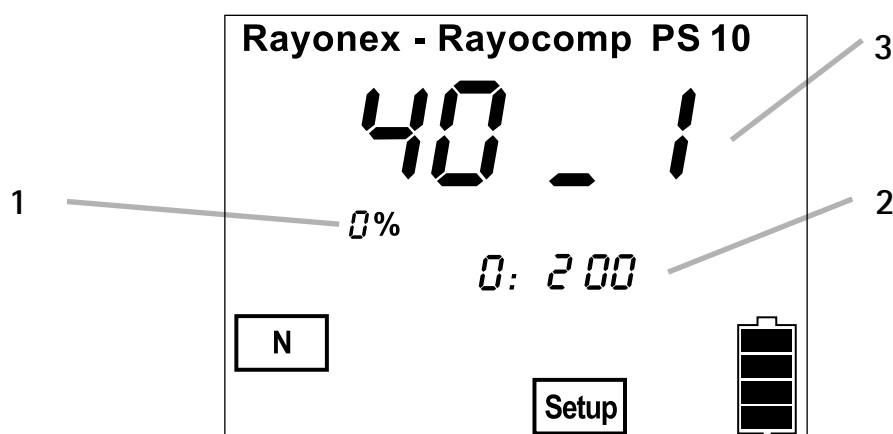
This set-up can help you if you have an unknown memory card and have no idea how many RAH-programs are stored on it, what kind of a memory card it is and so on.

A "Green Card" can comprehend maximum 200 RAH values. You can detect the number of RAH-programs from that figure, that is shown in the display with the 200 at the same time. (i.e. 34: 200)

Insert the memory card and enter the set-up number 40. The display may show:

Legend:

1: This number indicates the amount of values already stored on the memory card.



- 2: Here you can read the number of RAH-programs which can be stored on the memory card. An exception is the "Green Card". The "Green Card" can contain 200 RAH values, which are shown by turns.
- 3: If you see a 0, the memory card is faulty. A number 1 indicates a memory card suitable for use when working with the bioresonance according to Paul Schmidt. If the displayed numeral is a 2, this memory card can be used for the B.A.T.-acute programs according to Manfred Denecke. A "Green Card" is indicated with a 3.

4.5 Providing Write-Protection for a Memory Card

Setup Number: 42

This set-up function provides a write-protection for the inserted memory card or rather remove it. A memory card with write protection cannot be deleted by accident, nor can other fundamental frequency values be stored on it.

Please insert the memory card intended for write protection in your Rayocomp PS 10. On entering the set-up number 42, the display will either show 0 (card is not write-protected) or 1 if the card already has write protection.

If the card is not write-protected yet, please enter the numeral 1 and confirm with the **OK**-key to provide write protection for your memory card.

If the number 1 is displayed to show that your memory card is write-protected, simply enter 0 and confirm with the **OK** key to remove write protection.

4.6 Deleting a Memory Card completely

Setup Number: 43

With this set-up function, you can delete a memory card completely, thus preparing it for new writing processes.

Whenever you delete a memory card with this function, you do not only delete the RAH-programs stored on it, but also any read or write protection added to the contents of the card.

Please insert the memory card you want to delete in your Rayocomp PS 10. Enter the set-up number 43 and wait until a 0 is displayed. For safety reasons, you must enter a 1 at this stage and confirm with the **OK** key.

4.7 Initialising a Memory Card

Setup Number: 44

If you should come upon a memory card with illegible sticker, you can test the card with this setup function and reinitialise it. The function works for the memory cards of the bioresonance according to Paul Schmidt and also for the "Green Card".

When initialising the memory card with this function, the system values of the card are newly determined and written and all the stored RAH-programs are deleted. If the card is write protected, this is also deleted.

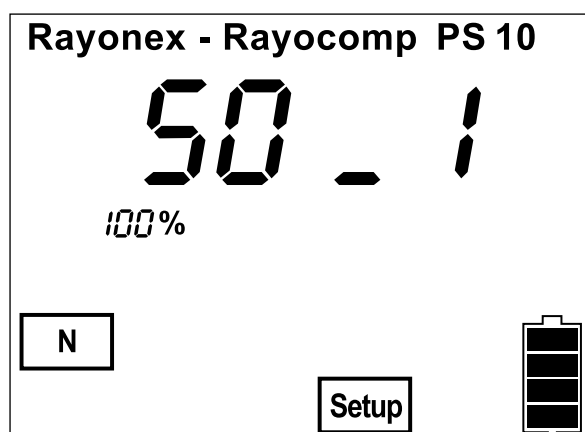
Please insert the memory card intended for initialisation in your Rayocomp PS 10. Enter the setup number 44 and wait until a 0 is displayed. For safety reasons, you must enter a 1 at this stage and confirm with the OK key.

4.8 Motor Test Run of the Frequency Module

Setup Number: 50

The user can test the mechanically driven frequency module of the Rayocomp PS 10 with this setup function. If your Rayocomp has been subject to jostling and vibration, perhaps during long transportation, you can make sure that the frequency module is still in perfect working order with this function.

After you have entered the setup number 50 and confirmed your entry with the **OK**-key, the Rayocomp PS 10 starts a trial run. You can read the progress of the trial run from your display. At the end, the device should display the following message:

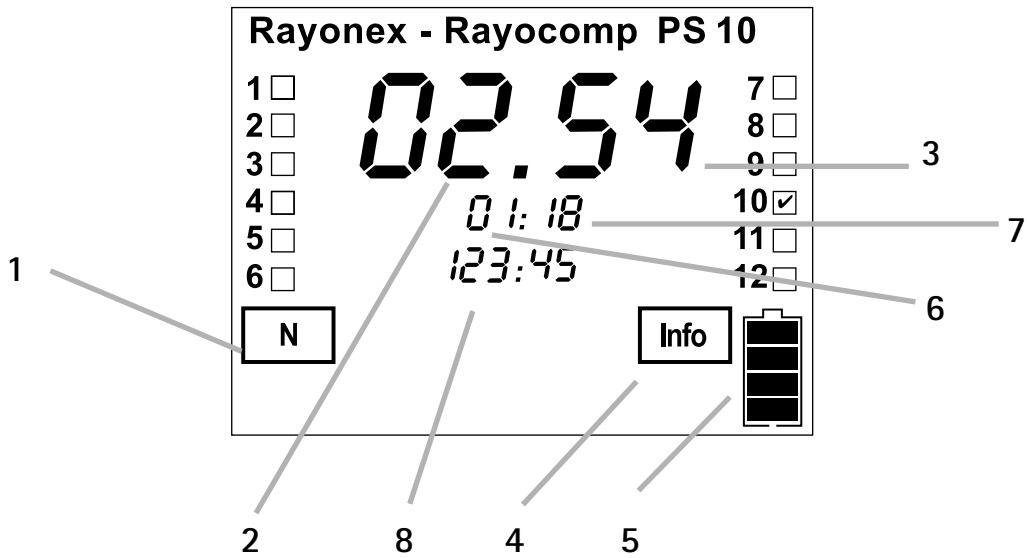


The 1 displayed behind the 50 indicates an optimal functioning of the frequency module. If you see a 0 in the same place, however, the trial run was faulty. Please repeat the trial run in this case. If the 0 appears again, your Rayocomp PS 10 has to be sent back to us.

4.9 "Info"

In the menu item "Info" you can look into all important details concerning the device, quickly and conveniently.

You arrive in the menu item "Info" by pressing the key **MODE** several times until the display below appears:



In the picture you can see that module 10 has been unlocked.

Module no.	Part No.:	Designation
10	2092	Rayonex Analysis and Harmonising program (RAH), Module 10

Legend:

- 1: Here, the currently set polariser mode is indicated. This is no special information, the polariser setup is visible in other menus, too. But for the sake of completeness, this is also displayed here.
- 2: This number informs you about the hardware version of the device, in this case the version 02. Devices including the version 02 have already been prepared in such a way that the RAH module can be activated by means of an activating code. Devices with the version 01 would first have to be modified. To this purpose, please contact the Rayonex company.
- 3: This number informs you about the software version of the device, in this case the version 54.
- 4: This indicates the currently active menu item.
- 5: This symbolises the load condition of the battery pack.
- 6: This number stands for the construction month of the device, in this case January.
- 7: This is the construction year of the device. In the example it is the year 2018.
- 8: These five numerals are the serial number of the device. The number, in our case 12345, is important for the definite classification of the device. Rayonex maintains a database with all the information concerning the device (i.e. the activated modules, etc.).

If you are thinking of enabling a module in the Rayocomp PS 10, you can call us and tell us your serial number to receive an enabling code. After entering this code, you can utilise the module immediately.

5. Error

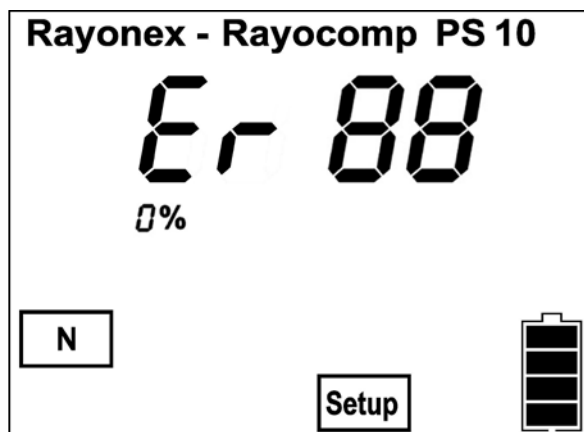
5.1 Error display

Operation of the Rayocomp PS 10 is very simple indeed. Still, you may accidentally press a button which has no function for this particular part of the program. In this case, the user will receive an acoustic signal.

The Rayocomp PS 10 has three different error messages or acoustic signals:

1. **One long sound:** with this signal, the device confirms a successfully completed action, i.e. an entry or storage.
2. **Two short sounds:** The key you are pressing has no current function.
3. **Two long sounds:** This signals a severe error. The device will supply an error code. In the appendix (chapter 5.2), you can look up the current error.

For example, if an error has been detected, the device might indicate the following:



If you look into the list in chapter 5.2, you will find the following information for the indicated error "Er 88" ("Er" is the abbreviation for error): you have tried to read in a memory card which has not been inserted.

Please note: The acoustic signal can be switched on or off in the menu item "Setup".

5.2 Summary of the Possible Error Messages

No.	Description
11	Wrong memory card type
12	Invalid memory card
13	No card inserted
14	Harmonising time must be at least 1 second
15	This setup item is vacant
16	Invalid module enabling code
20	Faulty motor contact. If this is a frequently occurring malfunction, the device must be sent in.
23	Module is not activated
25	It is not possible to provide read and write protection for this card
26	Maximum capacity of the memory full
27	This module has already been enabled temporarily
28	No "Green Card" inserted
29	Very low current! Charge battery pack!
31	This program group is non-existent
32	Close current program first by pressing the stop key twice
37	Card was removed in storing process
38	The polariser failed to switch to the selected mode. If this is a frequently occurring malfunction, the device must be sent in.
39	Hardware error of the RAH module
40	Please remove the card from the card slot
42	More than 200 RAH-programs were selected
44	Problem occurrence when writing one value
47	This program does not exist. An up-date is advisable
50	Unplug the charger from the PS 10; only charge the PS 10 when switched off
55	Wrong code
56	Module 10 is not active
84	This RAH program is a training program; no level test possible
85	This RAH program is not available
86	A maximum of 200 RAH programs can be loaded successively
87	No values on the memory card
88	No "valid" memory card inserted. Please check or, if necessary, reinitialise the card (see Set-up Item 40 or 44, respectively)
92	This module cannot be activated by the present hardware version. In case you are interested in the RAH-Module, please contact the Rayonex company.
99	Program error



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