Fig. 1

Illustrations

Side view of the Device

Device and Operating Elements

1 Mounting bracket with caster including locking device
2 Connection for supporting arm
3 Applicator cable connection
4 Supporting arm including applicator cable (4.1) and applicator (4.2)
5 Cable clip
6 Display
7 Slot for SD card
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Rear view of the Device

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Screens / Displays

**Fig. 3**

Displays/Therapy screen

14 Status bar
15 Title bar
16 Buttons on screen
17 Navigation bar

**Fig. 4**

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**Navigation Bar**

Description of functions

- (A) Home
- (B) Back
- (C) Memory
- (D) Body Area
- (E) Programs
- (F) Favorites
- (G) Scroll Forward
- (H) Scroll Backwards
In the User Manual this symbol indicates “Danger”.

In the User Manual this symbol indicates "Caution" with regard to possible damage of the device.

Operating instruction

Follow the User Manual.

Serial number

Article number

Manufacturer

Date of manufacture

Applied part type BF

The unit emits non-ionizing electromagnetic radiation.

CE Mark

The device is tested and manufactured in compliance with relevant safety standards.

Rx only

U.S.A Federal law restricts this device to sale by or on the order of a licensed healthcare practitioner licensed by the law of the State in which he/she practices to use or order of the Device.
## Contents

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Valid for the ThermoPro device.

This manual is an integral part of the device. It should be kept with the device so that the persons assigned to operate the device can access it at any time.

The instruction manual is valid from software version 1.8.0

U.S.A Federal law restricts this device to sale by or on the order of a licensed healthcare practitioner licensed by the law of the State in which he/she practices to use or order of the Device.
Indications

Indications for use in applying therapeutic deep heat in body tissues for the treatment of selected medical conditions such as disorders of the musculoskeletal system, muscle spasm, joint stiffness, contractures, and chronic inflammatory or infective conditions such as tenosynovitis, bursitis, synovitis and chronic inflammatory pelvic diseases.

Generally accepted indications for use:

- Pain Relief
- Reduce Muscle Spasm
- Localized Increase of Blood Flow
- Chronic Inflammatory Conditions
- Bursitis
- Decrease Joint Stiffness
- Tenosynovitis
- Contractures
- Synovitis
- Chronic Inflammatory Pelvic Disease

Contraindications

Shortwave diathermy is contraindicated if the patient

- does not understand the potential risks.
- is not able to co-operate with the operator in maintaining the proper position and in reporting the presence of a heating sensation which is the only indication of an adequate or excessive dose.
- is pregnant. If the device operator is pregnant, she should remain at least 5 meters away from the applicator when the unit is turned on, since the effects of high-frequency fields on a fetus have not yet been sufficiently researched.
- does not possess normal pain and thermal sensation in the area to be treated.
- has been diagnosed with
  - Acute/sub-acute thrombophlebitis
  - Peripheral arterial circulatory disorders
  - Lack of temperature sensation (e.g. polyneuropathies)
  - Pregnancy and menses
  - Acute pelvic inflammatory disease, parametritis, endometritis
  - Acute periarthropathia humeroscapularis
  - Acute traumatic lesions, haematoma
  - Sudeck syndrome stage I
  - Febrile infectious diseases, tuberculosis, acute neuritis
  - Acute prostatitis
  - Tumours and metastases
Indications / Contraindications

- has metal foreign body in the tissue (implants, pacemaker)
- has significant fluid retention in the body (for example, pleural effusion, ascites)
- is unconscious or not fully responsive
- is a baby or infant
- has damp clothes or wet dressings

Do not apply shortwave diathermy
  - if there are open wounds, hemorrhage, ischemic tissue, tuberculous joints, or acute infections within the treatment area.
  - over or in close proximity to active cancer, as therapy may increase blood flow to the tumor.
  - on patients, or within 10 feet of a person, with Cardiac Pacemakers or implanted defibrillators.
  - on patients, or within 10 feet of patients, who have ANY implanted systems with RF programming, or metallic lead, or any implanted system that may or may not contain a lead. Both the thermal and sub-thermal modes of operation pose a risk of tissue destruction.
| Side effects | Treatment with the ThermoPro can occasionally cause temporary local reddening of the skin. |
Prior to applying the device to the patient, the operator should be familiar with the instructions for use and individual treatment methods, indications/contraindications, warnings and application information. Additional sources of information about the therapy should also be consulted.

Caution!

Before use, ensure that the device is operated via a properly grounded power point with safety contacts (electrical installation according to DIN VDE 0100 Part 710). Do NOT connect this device to any wall outlet that has not been properly grounded, or to any electrically non-isolated medical device. The device must be operated with the power cord supplied. The power cord must be protected against mechanical stress.

Caution!

Do not lean on or hold the cables while the generator is activated. In addition to the strong heating effect, a deteriorated cable could break down and expose the user to high voltages.

Caution!

Keep all line cords away from the diathermy unit cables. Do not store or coil line cords where they can come close to the cables on an operating diathermy unit.

Caution!

Operating the device in the vicinity of strong electromagnetic fields (e.g. MRI, X-ray or other diathermy equipment) can interfere with the operation of the device. Please maintain a safe distance of several meters.

Caution!

ThermoPro is not suitable for use in areas having an explosive, flammable or combustive environment.

Caution!

During use, the device should be positioned to allow more direct access to the central power supply of the device, so that it can be disconnected from the mains at any time.

Caution!

To avoid the risk of electric shock, before performing any maintenance or cleaning activities, the device must be disconnected by removing the mains plug from the mains supply.

Caution!

Inspect the unit before use. If damage is found it must not be used. A device that is not safe to operate must be taken out of operation and secured against further use.

Caution!

Only accessories from Zimmer MedizinSysteme GmbH should be used. Replace defective parts, in particular the applicator and applicator cable, only with original parts from Zimmer MedizinSysteme.

Caution!

U.S.A Federal law restricts this device to sale by or on the order of a licensed healthcare practitioner licensed by the law of the State in which he/she practices to use or order of the Device.

Precaution!

Application site and settings should be based on the guidance of the prescribing practitioner.
Precaution!

When cleaning the device, never submerge in water or other liquids.

Precaution!

Inspect and cleanse the skin prior to application. Following treatment, check the skin for evidence of irritation or burns, and if present, treat as appropriate. If the patient has, or complains of, skin irritation following treatment, shorten the treatment time on the next treatment session or use an alternative type of therapy or drum inductive applicator placement.

Precaution!

The treatment area should be checked from time to time, and if there is evidence of, or if the patient complains of, pain or overheating during treatment, adjust the output downward until it is tolerated by the patient. If the patient continues to complain of pain or overheating, discontinue the treatment and shorten the treatment time on the next treatment session, or use an alternative type of therapy or applicator placement.

Precaution!

Do not apply treatment directly over/under hot or cold packs due to possible activation of chemical packs with diathermy treatment. Caution is recommended when treatment follows the application of hot or cold therapy, which may alter the patient's sensation. Application of thermal agents over areas of impaired circulation should be performed with caution as the circulation may be insufficient to heat or cool the tissue, altering the patient's perception of warmth and pain. Burns or tissue necrosis may result from subsequent treatment.

Precaution!

Treatment should not follow the application of medicated patches, salves, or creams. The presence of RF energy may be altered by the presence of these materials on the patient's skin. Some medications can alter the patient's sensation. Heat can also increase the absorption of medication and may be contraindicated. If there is a medical necessity to perform such treatments, these patients should be monitored diligently during application.

Precaution!

Caution should be used in the presence of recent surgical procedures, fractures or healing bone and soft tissue when therapy may disrupt the healing process. Thermal shortwave diathermy should be applied with caution over bone where minimal or no soft tissue is present.
Warning Notices

Treatment instructions about the location of the treatment and the duration and intensity of the treatment require medical knowledge and may only be given by approved doctors, therapists and members of the paramedical professions. These instructions must be followed.

The patient must not be left totally unattended during therapy.

Performing intracranial, cardiac trans occipital and occipital cervical treatments is prohibited. Failure to observe this can endanger the patient.

Simultaneous connection of a patient to ThermoPro and a high-frequency surgical device is prohibited. Failure to observe this can endanger the patient.

The function of certain implanted electrical devices, such as pacemakers or hearing aids, can be affected by therapy with shortwave therapy devices. In case of doubt, please seek advice from the physician responsible for the patient.

Persons with implanted devices should not enter rooms in which diathermy devices (such as ThermoPro) are operated.

Parts of the patient's body containing metal implants (for example, a bone pin) should generally be excluded from the treatment, unless special techniques are used.

Patients should not normally undergo shortwave therapy if they have reduced heat sensitivity in the body region to be treated, unless the attending physician is notified.

Shortwave treatment should not be performed on patients through items of clothing. Conductive materials should be removed from the treatment area. Shortwave treatment should also not be performed on patients wearing metallic objects such as jewellery or clothing with metallic materials (e.g., metal buttons, snap fasteners, buckles, zips or metal threads).

Ensure that the applicator is never directed towards the eyes and testicles during operation. During irradiation of other parts of the body, the applicator must be positioned so that the eyes and testicles are not within the irradiated area.

The radiation issuing from the applicator should not be directed onto electronic devices in the immediate vicinity or onto the ThermoPro itself. The devices can be impaired or permanently damaged.

The function of other appliances connected to the patient may be affected by the operation of shortwave therapy equipment.
Warning Notices

Use in wet areas is not permitted: non-compliance may lead to considerable damage and endanger both the patient and the operator.

Patients should not come into contact with conductive parts that are earthed or have a high capacitance to earth and may represent unwanted pathways for high-frequency current. In particular, no bearings or chairs with metal frames should be used.

Cabling to the applicator should be performed in such a way as to avoid contact with the patient or with conductive or energy-absorbing articles.

Ensure that the applicator is not directed onto metallic surfaces (e.g., bed, sink, equipment housing, etc.).

Ensure that hearing aids as well as other electronic equipment the patient wears on the body are removed before treatment.

Ensure that the applicator and the applicator cable are handled with the necessary care. Severe shocks and impacts can change the radiation pattern.

Ensure that the device is not opened. Opening the device can generate life-threatening voltage.

Make sure that the device is not operated with a damaged applicator or applicator cable.

Make sure that the device is operated only when the applicator cable and supporting arm are fully and correctly mounted on the device housing.

Ensure that the ventilation openings at the back of the device are kept clear.

Make sure that if liquid or foreign matter gets inside the casing, the power cord is immediately unplugged from the mains socket and the appliance checked by an authorized service center before you return it to operation.

Be sure to observe a safe distance of 17 feet from simultaneously operated medical equipment.
If case of faults, stop the treatment.

To completely disconnect the device from the mains, unplug the power cord from the outlet.
Warning Notices

Non-ionizing radiation is generated in the device!

Internal burns can occur with the incorrect application of shortwave diathermy due to excessive intensity or excessive exposure time!

Do not apply shortwave diathermy over the carotid sinus nerves, (located in the anterior neck triangle), including, stellate ganglion, vagus nerve, or laryngeal or pharyngeal muscle!

Particular care should be taken for patients
- with a known sensitivity to the carotid sinus reflex, as carotid sinus stimulation may alter blood pressure and cardiac contractility.
- over testes, heart or eyes. Electromagnetic effects may affect organ function.
- over or in close proximity to active cancer (except in terminal / palliative / hospice care), as therapy may increase blood flow to the tumor.
- when high fever is present, over swollen, severe infection, (osteomyelitis, sepsis, tuberculosis, etc.), or inflamed areas or skin eruptions, (e.g., phlebitis, thrombophlebitis, varicose veins, etc.).
- over the lumbar or abdominal region, or over the uterus during pregnancy (to prevent uterine contraction), or during menstruation as therapy may temporarily increase menstrual flow. over exposed spinal cord (i.e. following laminectomy, spinal fusion, etc.).
- directly over the cranial region, as little is known about the electromagnetic effects on the cerebrum to determine if it represents a serious hazard when shortwave diathermy is applied to the head.
- in the vicinity of the heart.
- directly over the epiphysis of growing bones in children and adolescents because shortwave diathermy may enhance or inhibit bone growth. Note that the mean age for skeletal maturity is 15.5 years in females and 17.5 years in males.
- over areas with excess adipose tissue.
- over areas of hemorrhage or active bleeding.
- over areas with compromised circulation.
- directly over or in close proximity to Deep Vein Thrombosis (DVT). Thermal agents should be avoided in early phases of a DVT.

Therapists should follow the guidelines provided by the referring physician on recommended activity level and modality use.

Before increasing generator output in response to a report of inadequate patient heating, verify that cables are properly routed, evenly spaced, and away from any metal or grounded objects. The heating effect may be misdirected and heating may be occurring in an unwanted area!
Warning Notices

All equipment and accessories should be kept out of the reach of children or unqualified persons!

Caution should be used when applying thermal shortwave over areas of body which lack normal sensation. Absent or diminished sensation should be avoided or, if unavoidable, treated with caution. Establishment of acceptable intensity levels for desensitized areas may be related to the intensity levels tolerated on normal skin in opposite or related body parts!

The device generates lethal high voltage!

Ensure that there is no power output during the positioning of the applicator and thus no accidental irradiation of patient and user.

Ensure that the user doesn't stay in the applicator's field during therapy. All persons not treated should stay further than 5 feet from the applicator.
### ThermoPro – in brief

<table>
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<th>A modern shortwave therapy system.</th>
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<tr>
<td>How does ThermoPro work?</td>
<td>In contrast to the heat treatment method in which heat (e.g. heat packs) is supplied from the outside, at shortwave therapy conversion of electric power into heat energy takes place directly inside the tissue.</td>
</tr>
<tr>
<td>How is electrical energy converted into heat energy?</td>
<td>The high-frequency field generates eddy currents in the treated tissues that lead to molecular excitations and convert the electrical energy into heat.</td>
</tr>
<tr>
<td>Why ThermoPro?</td>
<td>The modern and clear color display which displays all the parameters relating to the therapy and the modern touch controls, which ensure enthusiasm and motivation during treatment. Individual program start setting and a clear, simple menu provide maximum user comfort. User information on indications will support you during therapy.</td>
</tr>
<tr>
<td>What else does ThermoPro offer?</td>
<td>The option of either pulsed or continuous application opens up a wide range of indications to the operator.</td>
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### Intended Use

ThermoPro is a shortwave diathermy device for use in applying therapeutic deep heat for selected medical conditions by applying electromagnetic energy in the radio frequency band of 27.12 MHz and that is intended to generate deep heat within body tissues for the treatment of selected medical conditions such as relief of pain, muscle spasms, and joint contractures, but not for the treatment of malignancies.

See Section 1 of this User Manual for the detailed Indications for Use for this device.

### Essential performance

- Therapy frequency of 27,12 MHz +/-0,5%
- Maximum power of 100 W
- Pulse parameters adjustable

**Note:** The application of the device is reserved to medical professionals (e.g. doctors, therapists, members of the paramedical professions).
Assembling the Device

**Note:** Make sure that the power switch on the device is set to "0".

**Assembling mounting bracket**
Install the 4 mounting brackets including castors (1) on the bottom of the unit.

**Assembling supporting arm**
Slide the supporting arm (4) into the connection for the supporting arm (2).

**Assembling applicator cable**
Bolt the applicator cable (4.1) to the cable connection of the applicator cable (3).

**Connecting the power cable**
Connect the power cable to the provided socket (8) on the unit, connect the cable to the mains.

**Note:** The device may only be connected to power outlets with a properly grounded contact.

**Note:** After completion of the assembly, check again to see whether the supporting arm connection is properly inserted into the connector. Check that the applicator cable is properly connected to the connector.

The device may only be operated when the applicator cable has been properly connected. Otherwise a risk to people and environment or damage the device may occur.

**Switching on the device**
Turn on the unit with the mains switch (9).

**Switching off the device**
The device is switched off using the power switch (9). To completely disconnect the device (all-pole) from the mains, the power cord must be disconnected.

**Caution!**
All cables must be protected against twisting or other mechanical damage.
Note: Changes to the basic settings can only be made in the start-up screen.

Start-up screen After switching on the device and performing the self-test, the start-up screen opens.

Note: Activating the "Start" (2) button will immediately switch to the application screen.

Settings menu In the settings menu, the factory settings can be individually changed and adjusted.

Selecting settings Pressing the "Settings" (1) button opens the "Settings" screen.

The settings are described below. The default settings are pre-programmed as shown on the screen.
(1) Start Settings
1. Start menu:
Individual selection options for start settings.

2. Start screen:
Choice of two start screens.
The selection is made in the corresponding row.

(2) Language
Select the language.
The selection is made in the corresponding row.

(3) Audio/graphics settings
1. Brightness:
Adjust the screen brightness.

2. Volume:
Set the volume of the confirmation beeps that sound when the control panels are activated.
Adjustment is done by using the two arrow keys.

(4) OK
Touch the "OK" button to switch to the start screen.

(5) Version
Touching the "Version" button opens a window with information about the current software version.

(6) Default settings
Touching the "default" button restores the default factory settings.

(7) Welcome
Clicking in the "Welcome" field opens a window with an alphabetic keyboard for entering a customised welcome message on the start screen.
Touching the "OK" button saves the entered text.
Touching the "Cancel" button returns to the configuration menu.
Note: All buttons, menus and sub-menus can be activated directly on the screen by touching with your finger.

Start program
Touching the “Start” button in the start-up screen opens the application screen.

Positioning of the patient
Position the patient on a therapy table or a chair. Make sure that the area to be treated is easily accessible for the applicator and other body parts are not penetrated by the energy emitted by the unit. Observe the warning notices.

Positioning applicator
Place the applicator on the area to be treated. Observe the coupling indication. A maximum coupling should always be achieved. The better the coupling, the more energy is transferred. A distance of max. 1 cm is recommended.

Output settings
Set the output by using the arrow keys or bar graph.

Starting therapy
Pressing the “Start” button begins the therapy. The function of the “Start” button changes to “Stop”. The display in the status bar changes from “Ready” to “Active”.

Ending therapy
After expiration of therapy time, the power will be reset to “zero” and the therapy is finished. The function of the “Stop” button changes to “Start”. The display in the status bar changes from “Active” to “Ready”.

For immediate cancellation of the therapy press the button “Stop”.

Note: During therapy, the patient must be carefully monitored. Therapy should be adjusted or cancelled if problems occur.
8.2 Display and Buttons

Description of the display elements and buttons

(1) / (2) Arrow keys
- Pressing the arrow key (1) increases the power.
- Pressing the arrow key (2) reduces the power.
- 0 – 10 W in increments of 5.
- 10 – 200 W in increments of 10.

(3) Bar graph
- Function 1:
  Displays the set power. During active therapy, the bar graph is filled in.
- Function 2:
  Activating the bar graph (3) opens the window to select the power. Selection options: 20, 50, 70, 100, 120, 150 and 200 W.
  Selecting the desired output is performed in the corresponding field.

Pressing the “Cancel” button cancels the operation.
Operating Instructions

8.2 Display and Buttons

(4) Mode

Displays the selected operating mode.
When the window is activated, the parameter window for selecting continuous and pulsed operating modes opens.

Selecting the desired mode of operation is performed in the corresponding field. Select the desired parameter using the arrow buttons (1).
Activating the arrow key (2) increases or decreases the value.

Setting options in pulsed operating mode:
Frequency: 10 - 1000 Hz, CW mode
Adjustable:
10 Hz – 200 Hz in 10 Hz increments
200 Hz – 800 Hz in 100 Hz increments
1000 Hz

Duty cycle: 10 – 400 Hz: 10 - 90% (in 10% increments)
500 – 1000 Hz: 25%, 50%, 75%

(5) Coupling

Graphic display of the coupling (1).
Percentage display of the coupling (2).
Symbol of acoustic coupling signal (3).
The acoustic coupling signal can be switched on and off by pressing the symbol. The symbol changes accordingly.

Coupling signal activated
Coupling signal disabled

Note:
Sufficient coupling is necessary to ensure optimum energy transfer. Please note that the effectiveness also depends on the distance between the applicator and the skin, therefore place the applicator in such way, that proper coupling is ensured.
A maximum distance of 1 cm is recommended.
### Operating Instructions

#### 8.2 Display and Buttons

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tr>
<td>(6) Time</td>
<td>Displays the therapy time. Can be adjusted from 0 - 30 minutes. The treatment time is reduced by one-second intervals.</td>
</tr>
<tr>
<td>(7)/(8) Time arrow keys</td>
<td>Touching the arrow key (7) increases the time in 1-minute increments. Touching the arrow key (8) reduces the time in 1-minute increments.</td>
</tr>
<tr>
<td>(9) Save</td>
<td>Touching the button opens the box to input the name of a particular program to be stored in the memory or favourites list.</td>
</tr>
<tr>
<td>(10) Start/Stop</td>
<td>Touching the “Start” button after entering the output starts the therapy. The function of the “Start” button changes to “Stop”. Touching the “Stop” button during therapy sets the output to zero and the therapy time is suspended. The function of the “Stop” button switches to “Start”. Touching the “Start” button after the therapy has ended sets the therapy time back to the default value.</td>
</tr>
</tbody>
</table>
Operating Instructions

8.3 Body area

**Body area menu**
Pressing the Body area button opens the "Body area" menu.

**Selecting area**
The body area can be selected by pressing the blue circle.

**Therapy screen**
After selecting a body area the therapy screen opens:

The output power is always set to 0. All parameters can be individually adjusted.

⚠️ Do NOT apply shortwave diathermy in areas where treatment may impact patient safety

See Warnings, Section 4 of this Manual for more information.

**Note:** Each patient should be individually assessed to determine the appropriateness of the chosen parameter settings prior to use.
Operating Instructions
8.4 Favorites and Memory lists – Selecting Programs, Editing Lists

The parameters of the pre-defined programs can be individually modified and saved.

**Saving and naming programs**

Activating the "Save" button opens the field for entering the program name.

Enter the program name via the keyboard.

**Note:**

The programs can be saved in the favorites list or memory list. 120 memory locations are available.

**Save in Favorites list/Memory list**

Touching the button (1) opens the list of favourites and automatically stores the program in the Favorites list.

Touching the button (2) opens the memory list and stores the program in the Memory list.

Touching "OK" closes the "Save" screen and transfers the program to the corresponding list.

The program is always stored in the first available space on the list.

Touching the button (3) interrupts the save operation.

**Note:**

If the "Favorites" or "Memory" button is activated without entering a program name, the following message appears:

"Please enter a name!"

Confirm the message with "OK", enter the program name and repeat the save process.
Individually stored programs are listed in the favourites list.

These can be

1. retrieved for therapy,
2. edited (moved position and deleted).

Note: The steps to retrieve and edit the favorites/memory list are identical; so only the steps for retrieving and editing the favourites list are described.

Select Favorites List  
Pressing the “Favorites” button opens the favourites list.

Retrieving Program  
The desired program is directly selected in the corresponding row

Editing Favorites List

Activating the buttons (1) and (2) allows individual favorite pages to be viewed. Button (1) scrolls forward, button (2) backwards.

Activating the button (3) opens the “Edit Favorites” screen. Select the favorites to be edited directly in the line.
Operating Instructions
8.4 Favorites and Memory lists – Selecting Programs, Editing Lists

Editing favourites

Activating the button (1) returns you to the program.
Activating the button (2) moves the program to the top.
Activating the button (3) moves the program down.
Activating the button (4) deletes the program.

Note: Activating the button (4) triggers a safety query:

"Do you really want delete the program?"

Activating the "Yes" button deletes the program.
Activating the "No" button will cancel the deletion.
## Technical Information

| **Power supply**       | 100 – 240 VAC, 50/60 Hz  
                        | 220 VAC, 60 Hz          |
|------------------------|--------------------------|
| **Power input**        | Max. 700 W               |
| **Mains fuse**         | Circuit breaker in the mains switch |
| **Protection class**   | I                        |
| **Applied part**       | Type BF                  |
|                        | The front side of the applicator is defined as applied part. |
| **Applicator**         | Coil field method        |
| **Output frequency**   | 27.12 MHz ± 0.5 %        |
| **Output modes**       | Continuous (CW), Pulsed  |
| **Output power**       |                          |
| Continuous             | Max. 100 W ± 20 %        |
|                        | Max. 200 W peak ± 20 %   |
|                        | Mean Power limited to 64 W |
| Pulsed                 |                          |
|                        |                          |
| **Pulse rate**         | 10 – 1000 Hz, CW mode    |
|                        | Adjustable:              |
|                        | 10 – 200 Hz in 10 Hz increments |
|                        | 200 – 800 Hz in 100 Hz increments |
|                        | 1000 Hz                  |
| **Duty cycle**         | 10 – 400 Hz: 10 – 90 % (in 10 % increments, equivalent to 1:10 - 9:10) |
|                        | 500 – 1000 Hz: 25 %, 50 %, 75 % |
| **Pulse width**        | 250 µs – 90 ms in 250 µs increments (Preset - not adjustable) |
| **Dimensions**         | Width 22.9 in (581 mm) x Depth 18 in (459 mm)x Height 33.6 in (854 mm) |
| **Weight**             | 81.6 lb (37 kg)          |
| **Operation**          | 50 °F to 86 °F (10 °C to 30 °C), 20 % to 80 % rel. humidity, no condensation at 700 – 1060 hPa |
| **Storage / Transport**| 14 °F to 122 °F (-10 °C to 50 °C), 10 % to 90 % rel. humidity, no condensation at 700 – 1060 hPa |

*Note:* Storage and transport in original packaging.

Subject to technical modifications!
Before starting any maintenance and cleaning measures the device must always be turned off at the main switch and unplugged.

- Make sure that when cleaning and disinfecting the labels of the device (such as warnings, labels of control devices, identification plate) are not damaged.

- Make sure that during cleaning and disinfection no liquids penetrate the device. Do not use sprays.

- If during cleaning or disinfecting liquid penetrates the device, please put the unit out of service, protect it from getting used again and contact your service representative.

**Housing/Applicator**

**Cleaning:** In the event of visible contamination, the housing, the applicator and all cables should be cleaned between treatments using commercially available soft alcohol-free plastic cleaners. Wipe the surface until the dirt is removed, using a soft cloth soaked according to the specifications of the manufacturer of the cleaning agent but not dripping.

**Disinfection:** We recommend that disinfection to be carried out at least once a week, as well as in the event of evidence of possible contamination. Consult with your health professional when doing so. Always perform cleaning prior to disinfection.

Housing, applicator and cables can be disinfected using disinfectant wipes. To do so, use a commercially available alcohol-free disinfectant for metal and plastic, with bactericidal, virucidal and fungicidal properties. Observe the application instructions of the manufacturer. Wipe all surfaces using a cloth soaked according to the specifications of the manufacturer of the disinfectant, but not dripping, or use pre-impregnated disinfectant wipes (so-called wipes). If applicable, also observe requirements for drying or post-cleaning.

**Caution:** If flammable solutions are used for cleaning and disinfection, sufficient time must be allowed for the solutions to evaporate before using the device. Otherwise, it may lead to ignition!

**Note:** Only use the device in a hygienic environment.
The product bears the CE-mark

\[ \text{CE} \text{0123} \]

According to the EC directive 93/42/EEC on medical devices.
**Scope of Delivery**

1. ThermoPro base unit
2. Applicator including applicator cable
3. Supporting arm
4. Mounting bracket with castors incl. locking device
2. Cable clip
1. Power cable
1. User manual
1. Assembly instructions

**Accessories**

<table>
<thead>
<tr>
<th>Art.Nr.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>95523110</td>
<td>Applicator including applicator cable</td>
</tr>
<tr>
<td>91525010</td>
<td>Supporting arm</td>
</tr>
<tr>
<td>93521010</td>
<td>Mounting bracket with castors incl. locking device</td>
</tr>
<tr>
<td>80000410</td>
<td>Cable clip (2 count)</td>
</tr>
<tr>
<td>67300126</td>
<td>Power cable</td>
</tr>
<tr>
<td>10102233</td>
<td>User manual</td>
</tr>
<tr>
<td>10102148</td>
<td>Assembly instruction</td>
</tr>
</tbody>
</table>
Device Combinations

For ThermoPro no combination devices are provided by the manufacturer.

Anyone who, contrary to these guidelines, combines devices and operates a medical system in this way does so at their own risk.
Safety and Maintenance

ThermoPro is manufactured according to the safety regulations of DIN EN 60601-1.

This device has an expected service life of 10 years. As the device manufacturer, Zimmer MedizinSysteme can support the safety and reliability of this device through its service life if,

- the user shall perform a periodic maintenance at least every four weeks to ensure the safety of the device. Check the housing, the mains cable, the applicator cable, and the applicator for any safety-related damage such as gaps, cracks, and faulty isolation. Do NOT use the device and contact your service representative if any damage is found.
- the device is operated at a proper power outlet with an grounding contact and the electrical installation complies with DIN VDE 0100 part 710 or similar,
- the device is operated in accordance with the instructions for use,
- extensions, readjustments or modifications are only carried out by persons authorized by Zimmer MedizinSysteme,
- the operator is satisfied regarding functional safety, proper condition and mechanical integrity of the device and applicator prior to use of the device,
- the device is operated only by properly qualified personnel,
- the device is not operated in hazardous areas and/or a combustible atmosphere,
- the device is immediately disconnected from the mains in the event of penetration of liquids.

The device does not contain any parts that can be serviced or repaired by the operator.

No modification of this equipment allowed!

Regularly check the ventilation openings to ensure they are free of dirt. Clean if necessary.

Note: ThermoPro or its components do not require any periodic preventive maintenance.
ThermoPro performs a self-test after it is switched on, which checks all the internal components.

An error message will appear when a fault occurs.

An extended function test as described below can also be performed.

This test should be performed monthly or if there are any doubts about the functionality of the device.

**Function test**

Select continuous operating mode and set an output power of 5 W. Move your forearm into the treatment field and make sure that the coupling indicator displays at least 50%.
### Device malfunction

**No response to power switch/display remains dark**

**Possible cause**  
Network Switch

**Troubleshooting**  
Check that the power cord is properly plugged into the power outlet and the plug is firmly inserted into the socket of the device.  
Check the power cord for damage. In case of visible damage, replace it.  
Check the power supply and power outlet.

**The power switch jumps into position "0" self-acting**

**Possible cause**  
Overload

**Troubleshooting**  
After waiting 5 minutes, turn the switch back to position "I". If it jumps to position "0" again, please contact customer service.

### Applicator malfunction

**Possible cause**  
Faulty connection or damaged applicator or applicator cable.

**Troubleshooting**  
Check the correct position of the supporting arm and that the applicator cable is correctly joined to the applicator cable connection. Check the applicator for visible damage.

### Error message SD card

If the SD card is not inserted, the following message appears when you press the "Favourites" "Memory" and "Therapy" buttons:

"No SD card found."

Using "Favourites", "Memory" and "Therapy" requires an SD card.

Insert the card and confirm with "OK".

### Overtemperature

If the message “Overtemperature. Please let device cool down.” Appears, switch off the device and wait for 30 minutes before switching on the device again.

### General

For all other malfunctions, switch the machine off and wait 5 seconds before switching it on again. If the fault persists, please contact customer service in the USA.
Disposal

The device must be returned to the factory in its original packaging. It must be disposed of only by Zimmer MedizinSysteme.

In foreign (European) countries, please refer to the national regulations for disposal. Contact your distributor, if necessary.
Medical electrical devices like ThermoPro are subject to specific precautions relating to EMC (electromagnetic compatibility) and must be installed and set up in accordance with the EMC information contained in the operating instructions or accompanying documents.

Portable and mobile high-frequency communications equipment (e.g. mobile phones, cell phones) can affect medical electrical equipment.

ThermoPro may only be operated with the original power cable indicated in the list delivered with the appliance. Operating the device with a different power cable can result in increased emissions or decreased interference resistance of the device!

**Guidance and manufacturer’s declaration – Electromagnetic emissions**

The ThermoPro device is suitable for use in the specified electromagnetic environment. The purchaser or user of the ThermoPro device should assure that it is used in an electromagnetic environment as described below:

<table>
<thead>
<tr>
<th>Emissions test</th>
<th>Compliance</th>
<th>Electromagnetic Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF emissions CISPR 11</td>
<td>Group 2</td>
<td>The ThermoPro device must emit electromagnetic energy in order to perform its intended function. Nearby electronic equipment may be affected.</td>
</tr>
<tr>
<td>RF emissions CISPR 11</td>
<td>Class B</td>
<td>This ThermoPro device is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.</td>
</tr>
<tr>
<td>Harmonic emissions IEC 61000-3-2</td>
<td>Class A</td>
<td></td>
</tr>
<tr>
<td>Voltage fluctuations/flicker emissions IEC 61000-3-3</td>
<td>Complies</td>
<td></td>
</tr>
</tbody>
</table>

The device should not be used adjacent to or stacked with other equipment. When it is necessary to operate close to or stacked with other equipment, the device should be checked to verify its correct operation in this arrangement.
### Guidance and manufacturer’s declaration – Electromagnetic immunity

The ThermoPro device is suitable for use in the specified electromagnetic environment. The purchaser or user of the ThermoPro device should assure that it is used in an electromagnetic environment as described below:

<table>
<thead>
<tr>
<th>Immunity test</th>
<th>IEC 60601-1-2 Test level</th>
<th>Compliance level</th>
<th>Electromagnetic environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrostatic discharge (ESD)</td>
<td>± 6 kV contact</td>
<td>IEC 60601-1-2</td>
<td>Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.</td>
</tr>
<tr>
<td>IEC 61000-4-2</td>
<td>± 8 kV air</td>
<td>Test level</td>
<td></td>
</tr>
<tr>
<td>Electric fast transient/burst</td>
<td>± 2 kV for power supply lines</td>
<td>IEC 60601-1-2</td>
<td>Mains power quality should be that of a typical commercial or hospital environment.</td>
</tr>
<tr>
<td>IEC 61000-4-4</td>
<td>± 1 kV for input / output lines &gt; 3 m</td>
<td>Test level</td>
<td></td>
</tr>
<tr>
<td>Surge</td>
<td>± 1 kV differential mode</td>
<td>IEC 60601-1-2</td>
<td>Mains power quality should be that of a typical commercial or hospital environment.</td>
</tr>
<tr>
<td>IEC 61000-4-5</td>
<td>± 2 kV common mode</td>
<td>Test level</td>
<td></td>
</tr>
<tr>
<td>Voltage dips, short interruptions and voltage variations on power supply input lines</td>
<td>0 % Uₙ for 0.5 cycles 40 % Uₙ for 5 cycles 70 % Uₙ for 25 cycles 0 % Uₙ for 5 s</td>
<td>IEC 60601-1-2</td>
<td>Mains power quality should be that of a typical commercial or hospital environment. If the user of the ThermoPro device requires continued operation during power mains interruptions, it is recommended that the ThermoPro device be powered from an uninterruptible power supply or a battery.</td>
</tr>
<tr>
<td>IEC 61000-4-11</td>
<td></td>
<td>Test level</td>
<td></td>
</tr>
<tr>
<td>Power frequency (50/60 Hz) magnetic field</td>
<td>3 A/m</td>
<td>IEC 60601-1-2</td>
<td>Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.</td>
</tr>
<tr>
<td>IEC 61000-4-8</td>
<td></td>
<td>Test level</td>
<td></td>
</tr>
</tbody>
</table>
EMC Manufacturer's Declaration

Key features of the ThermoPro are: emission of RF energy and trouble-free operation of all functions. Continuous operation is not required for the intended application.

Guidance and manufacturer’s declaration – Electromagnetic immunity

The Thermo device is intended for use in the electromagnetic environment specified below. The customer or the user of the Thermo device should assure that it is used in such an environment.

<table>
<thead>
<tr>
<th>Immunity Test</th>
<th>IEC 60601-1-2 Test level</th>
<th>Compliance level</th>
<th>Electromagnetic environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiated RF</td>
<td>3 V/m</td>
<td>3 V/m</td>
<td>Portable and mobile RF communications equipment should be used no closer to any part of the ThermoPro device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</td>
</tr>
<tr>
<td>EN 61000-4-3</td>
<td>80 MHz to 2.5 GHz</td>
<td>d = 1.2 √P</td>
<td>80 MHz to 800 MHz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d = 2.3 √P</td>
<td>800 MHz to 2.5 GHz</td>
</tr>
<tr>
<td>Conducted RF</td>
<td>3 V</td>
<td>3 V rms</td>
<td>Recommended separation distance-related parameters.</td>
</tr>
<tr>
<td>EN 61000-4-6</td>
<td>150 kHz to 80 MHz</td>
<td>d = 1.2 √P</td>
<td>For conducted RF immunity, the separation distance is calculated using the following equation:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Where $P$ is the maximum output rating of the transmitter in watts (W) according to the transmitter manufacturer and $d$ is the recommended separation distance in meters (m).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Field strengths for fixed RF transmitter, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Interference may occur in the vicinity of equipment marked with the following symbol:</td>
</tr>
</tbody>
</table>
Recommended separation distances between portable and mobile RF communications equipment and the Thermo Pro device

The ThermoPro device is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the ThermoPro device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitter) and the ThermoPro device as recommended below, according to the maximum output power of the communications equipment.

<table>
<thead>
<tr>
<th>Rated maximum output power of the transmitter (W)</th>
<th>Separation distance according to frequency of transmitter (m)</th>
<th>150 kHz to 80 MHz</th>
<th>80 MHz to 800 MHz</th>
<th>800 MHz to 2.5 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01</td>
<td>[Equation]</td>
<td>0.12</td>
<td>0.12</td>
<td>0.23</td>
</tr>
<tr>
<td>0.1</td>
<td>[Equation]</td>
<td>0.38</td>
<td>0.38</td>
<td>0.73</td>
</tr>
<tr>
<td>1</td>
<td>[Equation]</td>
<td>1.2</td>
<td>1.2</td>
<td>2.3</td>
</tr>
<tr>
<td>10</td>
<td>[Equation]</td>
<td>3.8</td>
<td>3.8</td>
<td>7.3</td>
</tr>
<tr>
<td>100</td>
<td>[Equation]</td>
<td>12</td>
<td>12</td>
<td>23</td>
</tr>
</tbody>
</table>

For transmitters rated at the maximum output power not listed above, the recommended separation distance \(d\) in meters (m) can be estimated the equation applicable to the frequency of the transmitter, where \(P\) is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note:
(1) at 80 MHz and 800 MHz, the separation distance for the higher frequency range applies
(2) These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.