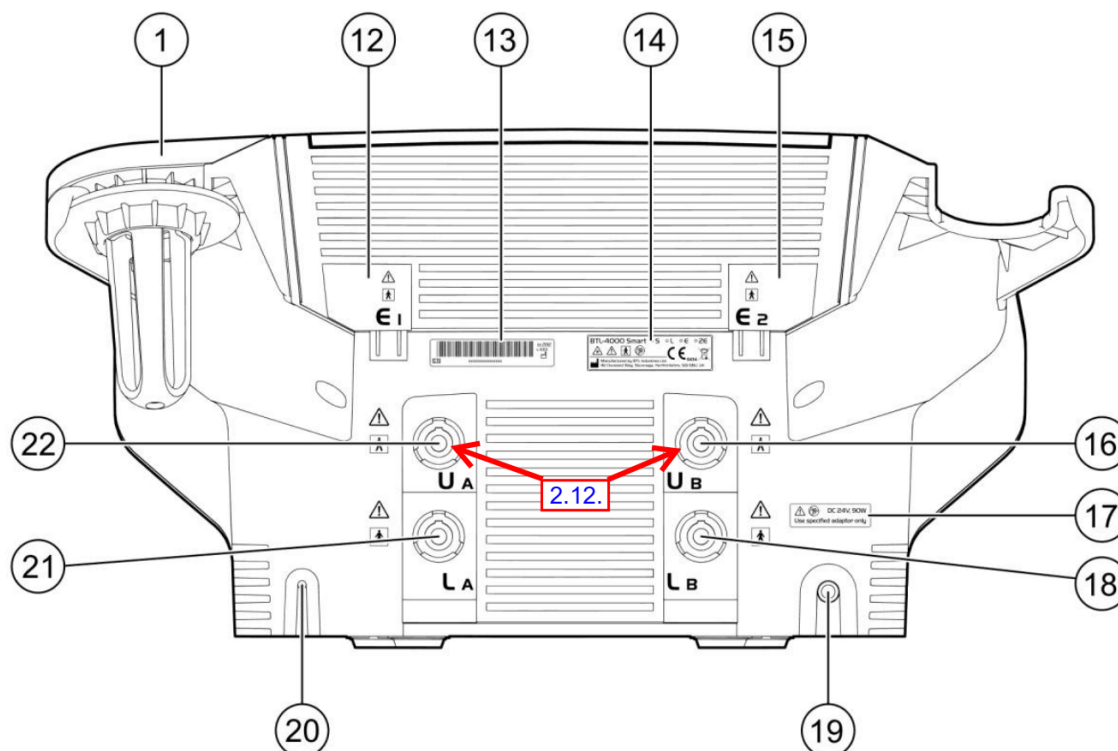


5.3 REAR PANEL OF THE DEVICE – MODEL WITHOUT MAGNETOTHERAPY

Configuration of the device with the generators for electrotherapy, ultrasound therapy and laser therapy.



- 1 accessories holder (the type of the holder depends on the specific device configuration – see Chapter **Accessories Holders**)
- 12 **E₁** output connector for the connection of electrotherapy accessories on channel 1
- 13 manufacturing label of the device containing the serial number
- 14 device type label
- 15 **E₂** output connector for the connection of electrotherapy accessories on channel 2
- 16 **U_B** output connector for the connection of ultrasound therapy accessories
- 17 power supply label UB , jungtis ultragarsiniams priedamas
- 18 **L_B** output connector for the connection of laser therapy accessories
- 19 power supply connector (exclusively for the use of the power adaptor mentioned in Chapter **Technical Parameters**)
- 20 connector of the laser therapy door switch
- 21 **L_A** output connector for the connection of laser therapy accessories
- 22 **U_A** output connector for the connection of ultrasound therapy accessories

UA, jungtis ultragarsiniams priedamas

5.8.1.2 **Encyclopaedia** 2.9. 2.9. Enciklopedija



After the selection of the required therapeutic protocol it is possible to find detailed information for the selected protocol by pressing the button with the encyclopaedia symbol on the therapy parameters screen.



2.9.

The encyclopaedia also includes a graphical part – pressing the respective button on the touch screen will display the recommended placement of electrodes or the place of application of ultrasound or laser therapy for every therapeutic protocol.

2.9. Nuspaudę šį mygtuką jutikliniame ekrane, rasite enciklopedijos grafinę dalį, kur pateiktos rekomendacijos kiekvienam terapiniam protokolui: kurioje vietoje uždėti elektrodą ar atlikti ultragarso ar lazerio terapiją.

Note: the therapeutic protocols (including the suggested times, intensities, doses and other parameters) serve only as a guide or a therapy proposal and by no means can they replace the professional consideration and experience from the clinical practice.

5.8.2 Quick Therapeutic Protocol Selection – QUICK Screen

After pressing the **quick** button on the touch screen of the BTL-4000 Premium the device displays the therapeutic protocol quick-selection screen – QUICK (in the BTL-4000 Smart this screen is not available).

The QUICK screen serves as a quick starting point of a therapy without the need to browse the entire list of all protocols. To select a protocol just press the respective button. If you use other protocols than those pre-set in the factory more frequently, you can modify the protocol list in the device menu (menu – specific settings – QUICK screen protocols).



Instead of the QUICK screen and the pre-set therapeutic protocols it is possible to display the screen for the selection of therapy by the program number; this option can be set in the device menu (menu – unit settings – advanced settings - QUICK screen mode). The program screen allows starting a therapy by selecting the program number which is assigned to every therapeutic protocol. The program numbers can be found in the protocol description in the encyclopaedia. To set the program value, press the required element on the touch screen and then use the **select** buttons/knob (6) or the numerical keyboard. The screen for the selection of therapy by the program number can be also displayed by pressing the **list** button twice.



5.11 DEVICE MENU

After pressing the **menu** button on the touch screen in case of the BTL-4000 Premium or on the device (11) in case of the BTL-4000 Smart you can browse the following menus of the device function settings:

- user settings / database
- unit settings
- specific settings
- electrodiagnostics (only if the device contains electrotherapy generator equipped with electrodiagnostics)

5.11.1 User Settings / Database 2.7. Duomenų bazė

Selecting the **user settings / database** item displays a menu with items referring to the data saved by the user:

- clients (only for BTL-4000 Premium)
- user therapeutic protocols
- user sequences (only if the device contains the electrotherapy generator)
- recent therapies

2.7. Šia pasirinktimi vartotojas gali sukurti, koreguoti ir ištrinti informaciją apie pacientą. Taip pat yra galimybė iš vartotojo terapinių protokolų sąrašo priskirti terapines procedūras konkrečiam klientui ir įkelti jas nuspaudus load (įkelti) mygtuką. Ši funkcija yra galima tik BTL-4000 Premium įrenginiuose.

5.11.1.1 Clients 2.7.

This item enables users to establish, edit and delete information about clients. It is possible to assign therapies from the list of user therapeutic protocols to any client and run these therapies after pressing the **load** button. This function is available only for BTL-4000 Premium.

5.11.1.2 User Therapeutic Protocols

This option allows running user therapeutic protocols after pressing the **load** button and editing or deleting their parameters, names and descriptions. Every generator tab only shows the therapies that have been created on that tab.

5.11.1.3 User Sequences

The user sequences function only applies to the electrotherapy generator.

Selecting the user sequences function allows working with the list of sequences created by the user. The selected sequence can be run, edited and deleted from this menu.

To create a new sequence, select the "sequence" type of current before entering the MANUAL screen. Continue to the EDIT screen of advanced parameters, where you can press the **new sequence** button and then enter the parameters of individual sections which the sequence shall consist of. To save the created sequence, press **save**.



Limitation of the range of currents in the sequence when the mode without pause between sections is selected:

If the option "**pause between sections**" is set in the sequence, the device stops the generation at the passage to the next section and it is necessary to set the intensity manually again. This allows adding the currents into sequences without limitation and utilizing the full range. We recommend setting this option.

If the option "**pause between sections**" is not set, the device continues generating the current in the next section with the same intensity.

ATTENTION! In this case you shall be very careful when setting the sequences. Each current type has different requirements for the subjective current intensity and therefore it is necessary to include only those currents that the patients perceive similarly. This may include currents with similar pulse length, frequency etc. Never should you mutually combine monophasic and biphasic currents.



6.3 ACCESSORIES FOR ULTRASOUND THERAPY

6.3.1 Standard Accessories

- 2.10.** • 1x ultrasound head 5 cm² (cable length: 220 ± 1.5 cm) **2.10. Ultragarsiné galvuté 5 cm2**
- 1x ultrasound gel in a 300 ml packing

6.3.2 Optional Accessories

- 2.11.** • ultrasound head 1 cm² (cable length: 220 ± 1.5 cm) **2.11. Ultragarsiné galvuté 1 cm2**
- HandsFree Sono 4, HandsFree Sono 6 – applicators for operator independent ultrasound therapy (cable length: 220 ± 1.5 cm)
- set of elastic straps for the fixation of the HandsFree Sono applicator, magnetic frame
- ultrasound gel in a 1 l packing
- plastic holder for HandsFree Sono

6.4 ACCESSORIES FOR LASER THERAPY

6.4.1 Optional Accessories

- laser probes – red and infrared (cable length: 220 ± 1.5 cm)
- laser clusters – red, infrared and combined (cable length: 220 ± 1.5 cm)
- optical attachments for laser probes
- laser probe holder
- warning labels
- protective goggles for laser therapy, protection grade L3 and higher

6.5 ACCESSORIES FOR MAGNETOTHERAPY

6.5.1 Optional Accessories

- disc applicator
- double disc applicator
- multi disc applicator
- solenoid 30 cm
- solenoid 60 cm
- solenoid 70 cm (only for the magnetotherapy couch)
- couch with a magnetotherapy applicator
- linear applicator
- ring applicator



step of setting	1 second
accuracy of therapy time	±5 % of the set value
Accuracy of time values	5 seconds per 1 day

8.1 TYPES AND MODELS OF THE DEVICE

The device comes in two types: BTL-4000 Smart and BTL-4000 Premium. The particular model of the device is shown on the device label; the summary is in the table below. The models which support electrotherapy and have the numeral 5 in their name (e.g. BTL-4625 Smart) contain a HW key extending the portfolio of currents.

Device models containing electrotherapy, ultrasound therapy and laser therapy generators:

Model	Device label	Ultrasound therapy	Laser therapy	Electrotherapy
BTL-4620 Smart, BTL-4625 Smart				X
BTL-4620 Premium, BTL-4625 Premium				X
BTL-4710 Smart		X		
BTL-4710 Premium		X		
BTL-4110 Smart			X	
BTL-4110 Premium			X	
BTL-4820S Smart, BTL-4825S Smart		X		X
BTL-4820S Premium, BTL-4825S Premium		X		X
BTL-4820L Smart, BTL-4825L Smart			X	X
BTL-4800SL Smart		X	X	
BTL-4820SL Premium, BTL-4825SL Premium		X	X	X



8.3 TECHNICAL PARAMETERS OF ULTRASOUND THERAPY

8.3.1 Parameters of the Ultrasound Generator

Adjustable values

Maximum intensity - continuous operation	2.4. Maksimalus intensyvumas nuolatiniame režime 0,1-2W/cm ² 0.1 to 2 W/cm ² ±30 % for the output intensity higher than 0.2 W/cm ²
Maximum intensity - pulse operation	2.5. Maksimalus intensyvumas pulsiniame režime 0,1- 3 W/cm ² 0.1 to 3 W/cm ² ±30 % for the output intensity higher than 0.2 W/cm ²
Working frequency	1 MHz ± 5 % and 3.1 MHz ± 5 %
Modulation frequency	10 Hz to 150 Hz ± 5 % 2.13. Moduliacijos dažnis 10-150 Hz
Duty factor*	5 % to 100 % ±5 % of the set value
Duty factor - presets	6.25 % (1:16), 12.5 % (1:8), 25 % (1:4), 50 % (1:2), 100 % (1:1) ±5 % of the set value
Maximum output power	13.2 W ± 20 %

*) the duty factor can only be set in the pulse mode, in the continuous mode it is always 100 %

Parameters of pulses

Duty factor	frequency 10 Hz period 100 ms		frequency 50 Hz period 20 ms		frequency 100 Hz period 10 ms		frequency 150 Hz period 6.67 ms	
	pulse length	pause length	pulse length	pause length	pulse length	pause length	pulse length	pause length
50 %	50 ms	50 ms	10 ms	10 ms	5 ms	5 ms	3.33 ms	3.33 ms
25 %	25 ms	75 ms	5 ms	15 ms	2.5 ms	7.5 ms	1.67 ms	5 ms
10 %	10 ms	90 ms	2 ms	18 ms	1 ms	9 ms	0.67 ms	6 ms
6 %	6 ms	94 ms	1.2 ms	18.8 ms	0.6 ms	9.4 ms	0.40 ms	6.27 ms

Steps of the adjustable values

Intensity	0.1 W/cm ²
Modulation frequency	10 Hz
Duty factor	1 %

8.3.2 Parameters of the Ultrasound Applicators

BTL-257-1-13 – Ultrasound head 1 cm²

Effective radiation area (A _{ER})	
A _{ER} (EN 61689)	0.7 cm ² ± 20 %
A _{ER} (21 CFR 1050)	0.9 cm ² ± 20 %
Maximum intensity	3 W/cm ² ± 30 %
Maximum acoustic power	
for A _{ER} according to EN 61689	2.1 W ± 20 %
for A _{ER} according to 21 CFR 1050	2.7 W ± 20 %
Radiation frequency	1 MHz and 3.1 MHz ± 5 %
Type of beam (1/3 MHz)	divergent/collimated
Beam non-uniformity ratio (R _{BN})(1/3 MHz)	2.2 ± 30 % / 3 ± 30 %
Covering grade	IP67 - protected against dust penetration and temporary immersion in water

