PhysiPod

BY PROFESSIONALS FOR PROFESSIONALS

AH-TU2

User Manual

AH-TU2

Patient Name:

Preset Program Number:

Settings:

Treatment Time:

Notes:

AH-TU2 USER MANUAL

Read this manual carefully and completely before using the AH-TU2 TENS/NMES and follow the instructions of your doctor or medical practitioner.

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Chapter 1.Safety information, maintenance and defects

1.1 Use of the device

The AH-TU2 is a 2 channel external stimulator used for the treatment of chronic and acute pain. The AH-TU2 is also equipped with a neuromuscular component for different muscle re-education treatments. Do not use the nerve stimulator for purposes other than those instructed by your treating physician or medical practitioner.

1.2 Precautions

- Avoid dropping or damaging the unit as this may cause it to malfunction.
- Check the stimulator and supplied cables for any damage before use.
- Do not use the AH-TU2 while driving or operating heavy machinery.
- Always switch off the stimulator ***before*** removing or placing electrodes on the skin.

1.3 Indications

TENS/NMES may be used for the following conditions.

TENS is used for:

- Symptomatic relief and management of chronic and intractable pain.
- Adjunctive treatment in the management of post-surgical and post-traumatic acute pain conditions.

NMES is used for:

- Prevention of disuse atrophy
- Relaxation of muscle spasms
- Increasing or maintaining range of motion
- Re-education of muscles
- Increases local blood circulation
- Prevention of venous thrombosis through post-surgical stimulation of calf muscles

1.4 Contraindications – (Caution)

- Do not use this device if you use a cardiac demand pacemaker
- Do not use this device if you have any form of cancer
- Do not apply current over the carotid sinus (neck) region
- Do not apply electrodes so that current flows transcerebrally (through the head)
- Do not use this unit if pain syndromes are undiagnosed, until etiology is established

1.5 Warning

- The functioning of some electronic monitors, i.e. ECG equipment, could possibly be disrupted when the stimulator is activated.
- Never use the stimulator for purposes not described in this manual or not recommended by your healthcare professional.
- Always keep the stimulator out of reach of children.
- Only use the stimulator on the recommendation of a medical professional, never allow others to use your AH-TU2.
- Do not place electrodes on damaged or irritated skin.
- Do not use electrodes with a smaller surface than 2 inches.
- Irritation of the skin is possible and can be caused by “Lengthy” use of small electrodes and/or an electric current that is too high.

1.6 Maintenance

The AH-TU2 stimulator requires little or no maintenance. If needed, clean the device with a damp cloth. Never use aggressive detergents like ether, alcohol or abrasives.

- Never submerge the device under water or in any other liquid. Should it become wet, have the device checked by the manufacturer or distributor.
- The manufacturer advises a technical check up of the device every 5 years.
- Clean the cables with a damp cloth. The use of aggressive detergents is not advised.
- Store the nerve stimulator and its accessories in the original case.
- Remove the batteries from the device if you do not intend to use it for an extended period of time.
- A low battery indicator is visible in the top right hand corner of the LCD screen.
- The AH-TU2 comes equipped with 4 regular alkaline AAA batteries.

Please note the following points when using rechargeable batteries:

- Rechargeable batteries are sensitive to over-charging. Do not overcharge.
- Rechargeable batteries have an electric discharge rate that strongly depends on the temperature of the environment. Keep out of extreme conditions.
- New rechargeable batteries occasionally need a few charging cycles in order to reach their optimal capacity.
- Rechargeable batteries must be charged at least once per 6 months.
- The average life expectancy of rechargeable batteries is usually 500 charging-cycles, but this strongly depends on its use. The total capacity of the battery will slowly decrease after multiple charging-cycles.

1.7 What to do in case of a defect

Repairs, expansions or alterations to your AH-TU2 stimulator should only be done by the manufacturer or distributor. Call PhysiPod on 03 9366 6611.

Chapter 2.The AH-TU2 electrical stimulator

2.1 General

The AH-TU2 is a two channel nerve stimulator. This unit has ten pre-set programs (indicated by P1 to P10) and ten user adjustable programs (indicated by U1 to U10), including six modes. They are on/off, standby, preset mode, treatment time user preset mode, program mode and user adjustable mode. There are two channels on the top of the device which work independently of each other. Two different forms of stimulation may be used simultaneously. You can also use just one channel. It is also possible to adapt user programs and pre-set programs to mask them (render invisible to the user). These options are to simplify the use of the device. The AH-TU2 will always start with the last used program and time. If no button is pressed within 3 minutes while in the wait mode, the unit will turn off automatically.

2.2 Controls Explanation

All programs or settings are selectable and controllable by pressing these buttons. Programs, intensities and other settings will be visible in the display.

Figure 1

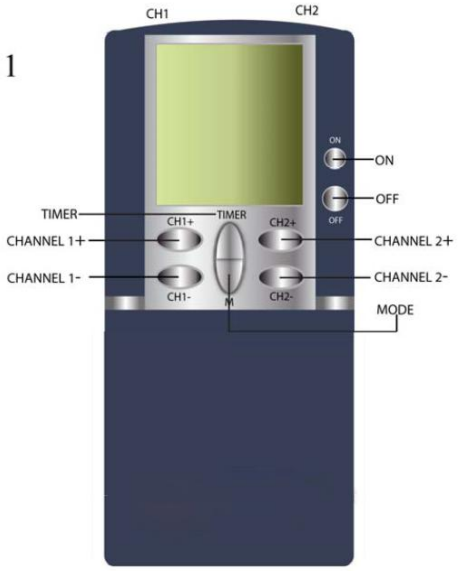


Figure 2

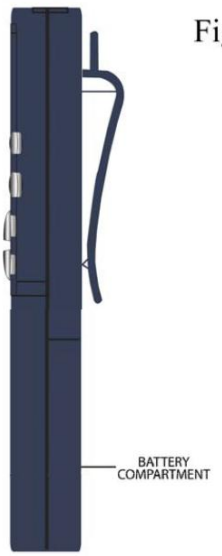
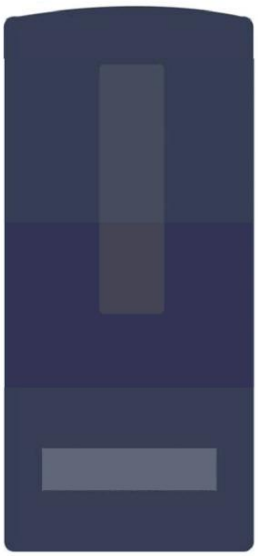


Figure 3



2.3 Button Explanation

2.3.1 On and Off

Press the [**ON**] button to enter the standby mode.

Consult your medical practitioner before altering any programs to this unit.

Press the [**M**] and then [**ON**] button and hold both down until user programs appears in display.

Press [**Timer**] and [**ON**] button to enter the preset programs. (See chapter 4)

Press the [**OFF**] button and device turns off.

*For safety and prevention of accidental increases of output to this device the AH-TU2 locks after several seconds of use. Pushing Ch1- & Ch2- simultaneously will **"UNLOCK"** the unit. You can now turn the unit OFF or increase or decrease the intensity of the AH-TU2.*

2.3.2 Mode

The mode [**M**] button scrolls through the programs one at a time. The button scrolls through the programs in one direction only so if you pass the program you want you have to continue to scroll until you return to the correct program. It is also used as the enter button when changing setting in user program mode.

2.3.3 Timer

Pressing the "Timer" button increases the time span for treatment in increments of 5 minutes. (Range from 0 to 90 minutes). Holding the timer button down will advance the time quickly, up to 90 minutes. Pressing the timer button once more will place the unit in continuous mode. The timer symbol will disappear when set as continuous work mode. (Time will show --.--)

2.3.4 CH1+/CH1- and CH2+/CH2-

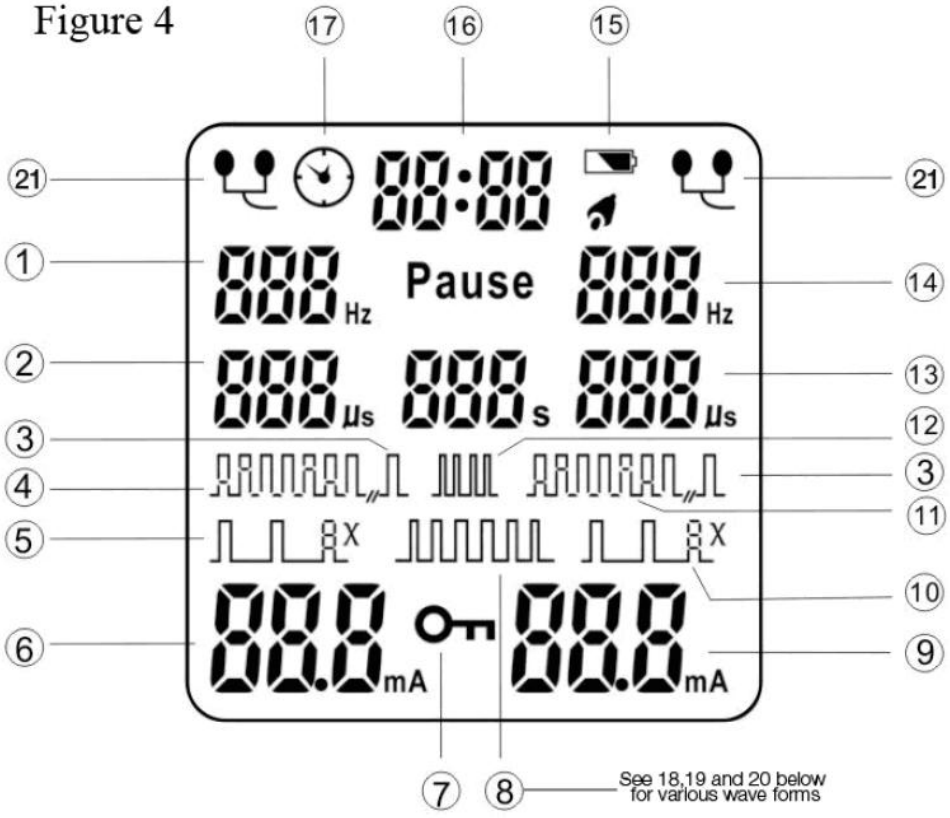
Pressing these buttons while in standby mode allows you to adjust the intensity by 0.5mA each step (range from 0.5mA to 70mA). The buttons on the right-hand side of the device control the right-hand side channel and vice versa. These buttons can also be used to set other parameters on the device. When in user modes (U1 to U10), pressing the [**CH1+**] or [**CH1-**] buttons will increase or decrease the intensity of each channel. As a safety feature, when adjusting in large steps by holding the [**CH1+**] or [**CH1-**] buttons the output will stop increasing after 10 steps. To increase further release and press the [**CH1+**] button again.

2.4 Battery compartment

The battery compartment is on the rear of the unit, press and slide down to release. Take care to insert batteries correctly to maintain correct polarity and avoid damaging the unit.

2.5 The display

Figure 4



1. Frequency of CH1
2. Pulse width of CH1
3. Output Burst wave form indication of CH1
4. High frequency output indication of CH1 wave form
5. Low frequency output indication of CH1 wave form
6. Intensity display of CH1
7. Intensity lock
8. Output PM wave form indication
9. Intensity display of CH2
10. Low frequency output indication of CH2 wave form
11. High frequency output indication of CH2 wave form
12. Output FM wave form indication
13. Pulse width of CH2
14. Frequency of CH2
15. Low battery indicator
16. Program number/(remaining) time
17. Timer symbol
18. EMS wave form ramp up indication
19. EMS wave form ramp down indication
20. EMS wave form contraction indication
21. Indicator will appear when inadequate electrode connections are present.
    (Possible electrode replacement may be needed)

Chapter 3. Getting Started

The device has 2 working modes:
Preprogrammed, and User Adjustable Program.

The preset program P10 has been chosen as the default program by your physician or medical practitioner to meet the needs of most patients. The user, with permission from their doctor or medical practitioner, can choose from other settings in the User Mode.

3.1 Cleaning the skin

It is important to take proper care to your skin. Cleaning your skin properly will ensure the best possible contact with the electrodes and will help prevent irritation to the skin. It is recommended that you remove all body hair where the electrodes are to be placed. Failure to remove hair may impair good contact with the skin. Hair removal will also facilitate easy removal of the electrodes.

3.2 Placement of electrodes

Caution:
Follow the instructions of your doctor or medical specialist on where to place the electrodes.

Follow all of the instructions included with the electrodes for trouble free usage.

3.3 Setting up the stimulator

After the electrodes are placed properly, you can activate the device, and select the desired therapy. The device starts up with the last used program. Select the program(s) recommended by your health care professional**.** In 4.1 of this manual you will find a summary of the standard programs. The setting of user program parameters can be found in the 4.2.2 and 4.2.3 sections of this manual.

Each time you press the [**M**] button the unit will advance to the next program. Check if the timer is set properly. Normally the timer is set to 30 minutes per program, unless your doctor or specialist has altered this. The time you set up for each program will be saved and used automatically if you select that program again.

After you have selected the desired program, you can set up its intensity. See section 2.3.2 on page 6 for instructions. If the electrodes are not attached to your skin, the intensity level will only advance to 9.5mA and then reset itself to 0. You will also see a warning sign [ ] on the display. If so, check to see if the cables and electrodes are connected properly.
If you are only using 1 channel, e.g. the left channel, you should use the CH1 +/- buttons.
For safety reason to stop accidental changes the unit will automatically lock into the program after 15 seconds; however the intensity level can be adjusted again by pressing the CH1- and CH2- buttons simultaneously to unlock the device first.

For details concerning treatment mode, please see section 4.2 in this manual.

3.4 Treatment period

You should strictly adhere to the instructions of your doctor or specialist. If you need a longer treatment period, you should first discuss this with your doctor or specialist before changing your program. The stimulator you are using has been programmed to a 30 minute default treatment and will turn off automatically after treatment.

3.5 Stopping your daily treatment

If you have activated the timer, the AH-TU2 will switch off automatically after your treatment is complete. You can also end the program manually by pressing the [**M**] button or turning down the stimulation until it reaches 0. When the current reaches 0 the device will stop and enter standby mode. The device can also be switched off by pressing the [**OFF**] button.

3.6 Removing the electrodes

Caution
Always switch off the device before removing the electrodes.

When removing the electrodes, follow the instructions on the electrode packaging.

3.7 Taking care of your skin

After you have removed the electrodes, carefully clean your skin with a mild soap. After the skin is cleaned, a red mark from the patches and/or electrodes may be visible on the skin. This is a normal reaction and usually disappears quickly (may take 30 – 60 minutes on some people).

3.7.1 Irritation of the skin

Despite all the precautions, it is still possible that you may experience skin irritations. Many skin creams take good care of your skin, but are, unfortunately, not compatible with electrical stimulation therapy. Most skin creams are oily or greasy and impair the flow of the current onto your skin. We advise you to use a special TENS/NMES cream, which does not contain any oils or perfumes. This cream is especially designed for this kind of stimulation and does not impair it in any way. If you experience persistent irritation of your skin when using the nerve stimulator, please contact your healthcare professional.

Chapter 4. Advanced options and setup possibilities

4.0 Buzzer

This option allows you to switch the buzzer sounds on or off. Press and hold the [**ON**] button for 3 seconds to activate or deactivate the buzzer sound function under the standby mode.

4.1 Default timer

The therapy time can be changed in steps of 5 minutes. The therapy time is set to 30 minutes by default for every program. In any of the preset programs the timer can be changed and stored but the other program parameters are fixed. On the following pages you can find several ways to set up your user programs.

4.2 Programs in the unit

There are 10 preset programs and 10 user programs in this unit. The program wave form of user programs is the same as the preset programs except for editing parameters. The preset programs are displayed in P1-P10. The user programs are displayed in U1-U10. See next page for user program chart.

4.2.1 Preset program table (P1 – P10)

No	Work Time Minutes	Channel	Frequency (Hz)	Pulse Width (uS)	Description	Character
P1	**30**	**Left - Right**	**110**	**80**		**Con**
P2	**30**	**Left - Right**	**2**	**250**		**Con**
P3	**30**	**Left**	**110**	**80**		**Con**
		Right	**2**	**250**		**Con**
P4	**30**	**Left - Right**	**100**	**150**	**Phase1, 3sec**	**Con**
	30	**Left - Right**	**2**	**100**	**Phase2, 3sec**	**Con**
P5	**30**	**Left**	**100/2**	**150/200**	**Phase1, 3sec Phase2, 3sec**	**Con**
		Right	**110**	**80**		**Con**
P6	**30**	**Left - Right**	**100**	**180**	**8 pulses, 2*per second**	**Burst**
P7	**30**	**Left - Right**	**110**	**60 to 100**	**1 sec from min to max**	**PM**
P8	**30**	**Left - Right**	**2 to 100**	**80**	**5 sec from min to max**	**FM**
P9	**30**	**Left - Right**	**3.363K**	**75**	**4 pulse 100*per sec**	**Burst**
P10	**30**	**Left - Right**	**100**	**150**	**Up,1sec**	**IM**

Figure 5

4.1.2 User program table (U1 – U10)

These programs are user adjustable within the parameters listed.

No	Work Time (Minutes)	Channel	Step	Parameter	Adjustments	Description	Character
U1	User - Defined	Left/Right	1	Pulse Width	30…300(uS)		Continuous
			2	Frequency	1…175(Hz)		
U2	User - Defined	Left/Right	1	Pulse Width	30…300(uS)		Continuous
			2	Frequency	1…175(Hz)		
U3	User - Defined	Left	1	Pulse Width	30…300(uS)		Continuous
			2	Frequency	1…175(Hz)		
		Right	3	Pulse Width	30…300(uS)		Continuous
			4	Frequency	1…175(Hz)		
U4	User - Defined	Left/Right	1	Pulse Width	30…300(uS)	Phase 1	Burst
			2	Frequency	60…175(Hz)	Phase 1	
			3	Duration	1…10(Sec)	Phase 1	
		Left/Right	4	Pulse Width	30…300(uS)	Phase 2	Burst
			5	Frequency	1…20(Hz)	Phase 2	
			6	Duration	1…10(Sec)	Phase 2	
U5	User - Defined	Left	1	Pulse Width	30…300(uS)	Phase 1	Burst
			2	Frequency	60…175(Hz)	Phase 1	
			3	Duration	1…10(Sec)	Phase 1	
		Left	4	Pulse Width	30…300(uS)	Phase 2	Burst
			5	Frequency	1…20(Hz)	Phase 2	
			6	Duration	1…10(Sec)	Phase 2	
		Right	7	Pulse Width	30…300(uS)	Phase 3	Continuous
			8	Frequency	1…175(Hz)	Phase 3	

No	Work Time (Minutes)	Channel	Step	Parameter	Adjustments	Description	Character
U6	User - Defined	Left/Right	1	Frequency	100(Hz) Fixed	Phase 1	Burst
			2	Pulse Width	30…300(uS)	Phase 1	
			3	Total	1…25(X);1 2*per second	Phase 1	
			4	Select Combi_TENS	ON / OFF	If ON go to step 5 and 6	Continuous
		Right	5	Pulse Width	30…300(uS)	Phase 2	
			6	Frequency	1…175(Hz)	Phase 2	
U7	User - Defined	Left/Right	1	Frequency	1…175(Hz)	Phase 1	PM
			2	Select Combi_TENS	ON / OFF	If ON go to step 3 and 4	
		Right	3	Pulse Width	30…300(uS)	Phase 2	
			4	Frequency	1…175(Hz)	Phase 2	
U8	User - Defined	Left/Right	1	Pulse Width	30…300(uS)	Phase 1	FM
			2	Select Combi_TENS	YES / NO	If YES go to step 3 and 4	
		Right	3	Pulse Width	30…300(uS)	Phase 2	Continuous
			4	Frequency	1…175(Hz)	Phase 2	
U9	User - Defined	Left/Right	1	Total Pulse	2…(10X);100 *per second pulse width 76uS	Phase 1	Burst
		Right	2	Select Combi_TENS	YES / NO	If YES go to step 3 and 4	
		Right	3	Pulse Width	30…300(uS)	Phase 2	Continuous
			4	Frequency	1…175(Hz)	Phase 2	
U10	User - Defined	Left/Right	1	Pulse Width	30…300(uS)	Phase 1	IM
			2	Frequency	60…175(Hz)	Phase 1	
			3	Ramp Up	(0.5)…(2.5)sec	Phase 1	
			4	Stimulation	(0)…(10)sec	Phase 1	
			5	Ramp Down	(0.5)…(2.5)sec	Phase 1	
			6	Pause	(0)…(10)sec	Phase 1	
			7	Select Combi_TENS	YES / NO	If YES go to step 3 and 4	Continuous
		Right	8	Pulse Width	30…300(uS)	Phase 2	
			9	Frequency	1…175(Hz)	Phase 2	

Figure 6

4.3 Setup and advanced options

There are 2 modes of operation

1. PRESET (P1 – P10)
2. USER ADJUSTABLE PROGRAM MODE (U1 – U10)

4.3.1 Shared functions for all modes

1. Press the [**ON**] button to switch the unit on, and enter into treatment mode.

2. Press the [**CH1+**] or [**CH2+**] button to increase the intensity of CH1 or CH 2, increasing it 0.5mA each time, the maximum is 70mA.

3. Press the [**CH1-**] or [**CH2-**] button to decrease the intensity of CH1 or CH2 decreasing it 0.5mA each time, the minimum is 0.0mA.

4. Press the [**CH1+/-**] or [**CH2+/-]** button continuously to adjust the intensity quickly.

5. In treatment mode, the device will be locked automatically if no button is pressed in 15 seconds. To unlock the device, press both [**CH1-**] and [**CH2-]** simultaneously.

6. When the electrodes from either of the channels do not make good contact with the skin, the intensity will turn to 0 automatically after increasing to 9.5, at the same time there's the load signal [ ] shown on the screen and an alarm will sound.

7. When the program has finished, both of the channels will turn off, and the intensity will turn to 0, at the same time, there's an alarm sound returning the unit to the standby mode.

8. Press the [**M**] button and, both of the channels will stop working and the intensity will turn to zero 0.0mA.

9. The adjustment of treatment time in working mode:

    - In the treatment mode press the [**Timer**] button to set the treatment time. Each time it is pressed, the time will increase by 5 minutes up to a maximum of 90 minutes, after which the unit will operate in continuous mode.

    - Press and hold the [**Timer**] button to adjust the time quickly.

    - Press and hold the [**CH1+**] or [**CH2+**] buttons to adjust the intensity quickly.

    - Press the [**OFF**] button to switch the unit off.

10. When the intensity output is set to 0, turn the warning / button press, sound ON or OFF by pressing the [**ON**] button for 3 seconds.

11. If there is no intensity output or activity for 3 minutes the device will turn off automatically.

4.3.2. Preset user on/off mode

This function is used to hide programs from the user that the medical practitioner does not want the user to access. To access all programs and change whether they are hidden or not use the following key presses. With the unit turned off, press and hold the [**Timer**] button and then press the [**ON**] button simultaneously for 3 seconds to enter into program hidden mode. In this mode, the LCD will show the wether the current program is ON or OFF. OFF means this program is hidden from the user and cannot be viewed or used in working treatment mode. ON means the user can view and use this program in working treatment mode. In the program on/off mode, the device will power off automatically if no button is pressed after 3 minutes.

To set the program:

- Press the [**CH1+**] button, the LCD will show ON, which means this program is available.
- Press the [**CH1-**] button, the LCD will show OFF, which means this program is hidden.
- Press [**CH2+**] to choose the next program, press [**CH2-**] to choose the previous program.
- Press the button [**OFF**] to save the settings.

4.3.3 User adjustable programs

The parameters of Programs U1 thru U10 can be set by the user, under the direction of your healthcare professional. With the unit turned off, press and hold the [**M**] button and then press the [**ON**] button simultaneously for 3 seconds to enter into parameter setting mode. In the parameter setting mode, the device will turn off automatically if no button is pressed within 3 minutes. In this mode, press [**CH2+**] or [**CH2-**] to select the program you wish to use. There are 10 user adjustable modes (U01 - U10), the parameters of each program can be set as shown on the following pages.

U01-U02 Parameter Setting

The LCD shows the current program, the frequency, the pulse width of CH1 and CH2, and pulse sign. Pressing the button [**M**] will first save the last parameter set and then show the next parameter (flashing) waiting to be set.

1. First, the frequency digit will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Now press the [**M**] button. This will save the frequency settings and move to pulse width adjustment.

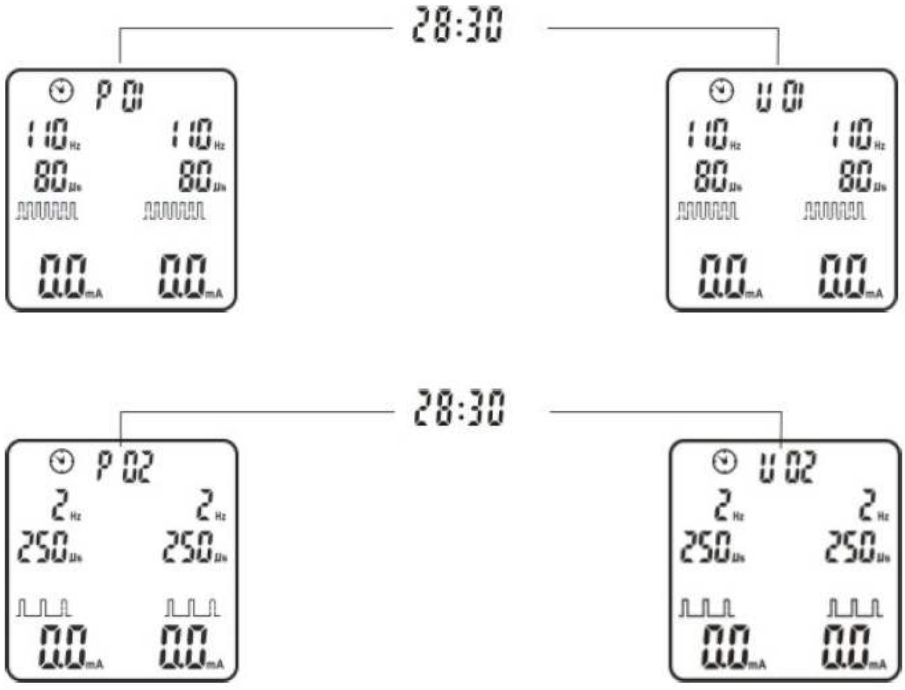
2. The pulse width digit will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS).

3. Because the parameters of CH1 and CH2 in program U01 and U02 are the same, when setting the frequency and pulse width of CH1, the same parameter of CH2 will also change.

4. After setting the frequency and pulse width, press the [**M**] button and when no digits are flashing, this means the last parameter set has been saved.

5. If you press the [**M**] button again, then you can re-start the parameter setting.

6. After setting the frequency and pulse width of CH1 and CH2, press the [**OFF**] button, which saves all the settings.



U03 Parameter Setting

In the parameter setting mode, press [**CH2+**] or [**CH2-**] to choose the program U03 (in the program, the output parameter of CH1 and CH2 are different, so it needs to be set separately). Pressing the [M] button will save the last value and then flash the next parameter which is going to set.

1. First, the frequency digit of CH1 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Now press the [M] button. This will save the CH1 frequency settings and move to the CH1 pulse width adjustment.

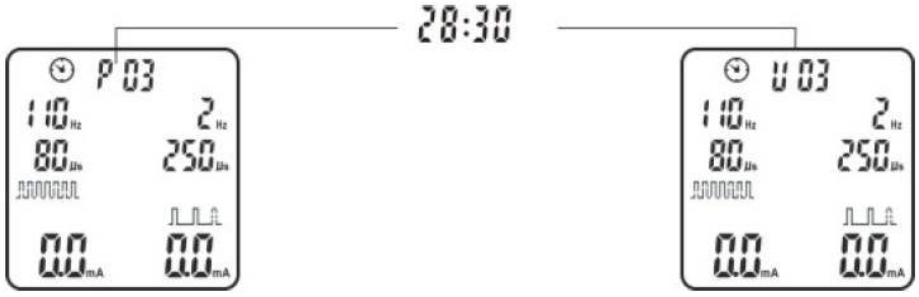
2. The CH1 pulse width digit will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Now press the [M] button. This will save the CH1 pulse width settings and move to the CH2 frequency adjustment.

3. Now the frequency digit of CH2 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Now press the [M] button. This will save the CH2 frequency settings and move to the CH2 pulse width adjustment.

4. The CH2 pulse width digit will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Now press the [M] button. This will save the CH2 pulse width settings and complete the U03 set up.

5. If you press the [**M**] button again, then you can re-start the parameter setting.

6. After setting the frequency and pulse width of CH1 and CH2, press the [**OFF**] button, which saves all the settings.



U04 Parameter Setting

In the parameter setting mode, press CH2+/CH2- to choose the program U04. (In this program, the output works by alternating between high frequency and low frequency.)

1. The high frequency and pulse width settings range from (Frequency 60-175Hz, Pulse width 30-300uS).

2. First the high-frequency digit of CH1 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to the next setting.

3. The high-pulse width digit of CH1 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to the next setting.

4. The numeral between the pulse width of CH1 and CH2 will flash. Now set the high frequency working time (1-10S). Press [**CH1+**] to increase or [**CH1-**] to decrease the working time. Pressing the [**M**] button will save this setting and move to the next setting.

5. The low frequency and pulse width settings range from (low frequency is 1-20Hz, pulse width is 30-300uS).

6. First, the low-frequency digit of CH1 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to next setting.

7. The low pulse width digit of CH1 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to the next setting.

8. The numeral between the pulse width of CH1 and CH2 will flash. Now set the low frequency working time (1-10S). press [**CH1+**] to increase or [**CH1-**] to decrease the working time. Pressing the [**M**] button will save this setting and complete the setup.

9. Because the parameters of CH1 & CH2 are concordant, when setting the frequency and pulse width of CH1, the frequency and pulse width of CH2 will also change.

10. If you press the [**M**] button again, then you can re-start the parameter setting.

11. After setting the frequency and pulse width of CH1 and CH2, press the [**OFF**] button, which saves all the settings.

Phase 1

Phase 2

U05 Parameter Setting

In the parameter setting mode, press CH2+ or CH- to choose program U05 (in this program, CH1 alternates between high frequency and low frequency, CH2 is constant).

1. The CH1 high frequency and pulse width settings range from (Frequency 60-175Hz, Pulse width 30-300uS).

2. First the high-frequency digit of CH1 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to the next setting.

3. The high-pulse width digit of CH1 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to the next setting.

4. The numeral between the pulse width of CH1 and CH2 will flash. Now set the high frequency working time (1-10S). Press [**CH1+**] to increase or [**CH1-**] to decrease the working time. Pressing the [**M**] button will save this setting and move to the next setting.

5. The CH1 low frequency and pulse width settings range from (low frequency is 1-20Hz, pulse width is 30-300uS).

6. First, the low-frequency digit of CH1 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to the next setting.

7. The low pulse width digit of CH1 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to the next setting.

8. The numeral between the pulse width of CH1 and CH2 will flash. Now set the low frequency working time (1-10S). press [**CH1+**] to increase or [**CH1-**] to decrease the working time. Pressing the [**M**] button will save this setting and move to the next setting.

9. In user program U05 the output parameters of CH1 and CH2 are different. The CH2 frequency and pulse width settings range from (Frequency 1-175Hz, Pulse width 30-300uS).

10. The frequency digit of CH2 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to the next setting.

11. The pulse width digit of CH2 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save these settings and complete the setup.

12. If you press the [**M**] button again, then you can re-start the parameter setting.

13. After setting the frequency and pulse width of CH1 and CH2, press the [**OFF**] button, which saves all the settings.

Phase 1

Phase 2

U06 Parameter Setting

In the parameter setting mode, press [**CH2+**] or [**CH2-**] to choose U06 program. In this program the output parameters of CH1 and CH2 are all BURST, or CH1 is BURST and CH2 is continuous. In program U06 the CH1 frequency is fixed.

1. The frequency of CH1 is fixed to 100Hz. The LCD will show the CH1 pulse width flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to the next setting.

2. The BURST pulse digit between CH1 and CH2 will now flash. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse numerical value (2-25). Pressing the [**M**] button will save this setting and move to the next setting.

3. The right side wave sign will flash, at the same time either ON or OFF will show between CH1 and CH2. If you choose ON then CH1 and CH2 have different settings and you will continue on to configure the CH2 settings. If you choose OFF, CH1 and CH2 settings will be the same and you have now finished setting up program U06.

    - To choose ON go to step 4
    - To choose OFF go to step 8

4. To choose ON press [**CH1+**]. The ON or OFF will disappear and the frequency digit of CH2 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to the next setting.

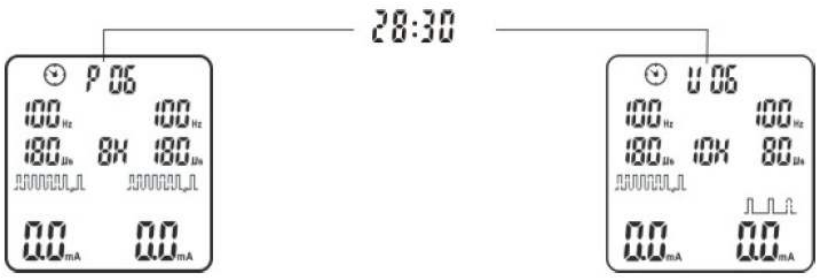
5. The pulse width digit of CH2 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to the next setting.

6. Go to step 8.

7. To choose OFF press [**CH1-**]. The output setting for CH1 and CH2 are now the same.

8. If you press the [**M**] button again, then you can re-start the parameter setting.

9. After setting the frequency and pulse width of CH1 and CH2, press the [**OFF**] button, which saves all the settings.



U07 Parameter Setting

In the parameter setting mode, press [**CH2+**] or [**CH2-**] to choose U07 program. In this program the output parameters of CH1 and CH2 are all BURST, or CH1 is BURST and CH2 is continuous. In program U07 the CH1 pulse width is fixed.

1. First the high-frequency digit of CH1 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to next setting. As the pulse width of CH1 is fixed, it doesn't need to be set.

2. The right side wave sign will flash, at the same time either ON or OFF will show between CH1 and CH2. If you choose ON then CH1 and CH2 have different settings and you will continue on to configure the CH2 settings. If you choose OFF, CH1 and CH2 settings will be the same and you have now finished setting up program U06.

   - To choose ON go to step 3
   - To choose OFF go to step 6

3. To choose ON press [**CH1+**]. The ON or OFF will disappear and the frequency digit of CH2 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to the next setting.

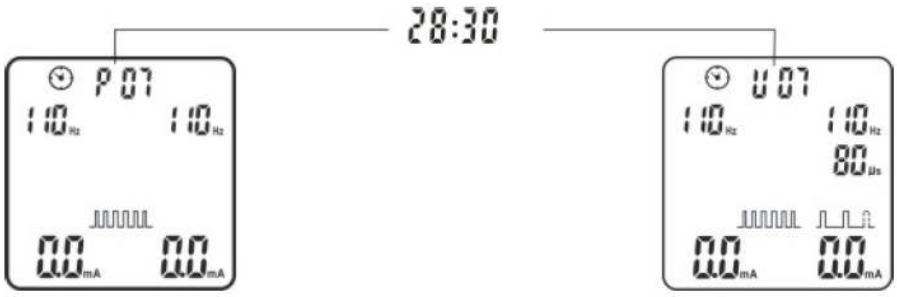
4. The pulse width digit of CH2 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to the next setting.

5. Go to step 7.

6. To choose OFF press [**CH1-**]. The output setting for CH1 and CH2 are now the same.

7. If you press the [**M**] button again, then you can re-start the parameter setting.

8. After setting the frequency and pulse width of CH1 and CH2, press the [**OFF**] button, which saves all the settings.



U08 Parameter Setting

In the parameter setting mode, press [**CH2+**] or [**CH2-**] to choose program U08. In this program the output parameter of CH1 and CH2 are FM, or CH1 is FM output and CH2 is continuous output.

1. The pulse width digit of CH1 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to the next setting.

2. The right side wave sign will flash, at the same time either ON or OFF will show between CH1 and CH2. If you choose ON then CH1 and CH2 have different settings and you will continue on to configure the CH2 settings. If you choose OFF, CH1 and CH2 settings will be the same and you have now finished setting up program U06.

   - To choose ON go to step 3
   - To choose OFF go to step 6

3. To choose ON press [**CH1+**]. The ON or OFF will disappear and the frequency digit of CH2 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to next setting.

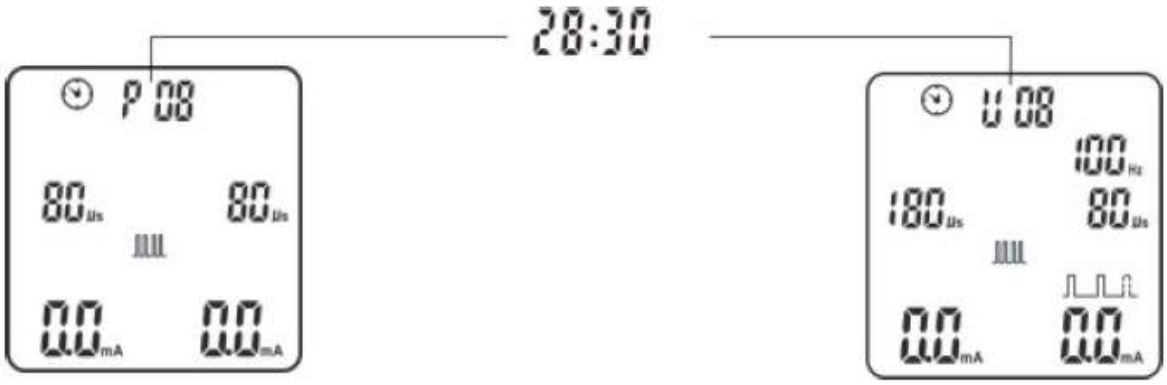
4. The pulse width digit of CH2 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to next setting.

5. Go to step 7.

6. To choose OFF press [**CH1-**]. The output setting for CH1 and CH2 are now the same.

7. If you press the [**M**] button again, then you can re-start the parameter setting.

8. After setting the frequency and pulse width of CH1 and CH2, press the [**OFF**] button, which saves all the settings.



U09 Parameter Setting

In the parameter setting mode, press [**CH2+**] or [**CH2-**] to choose program U09. In this program, you can choose the output waveform of CH1 and CH2 as all BURST, or the output of CH1 is BURST, while CH2 is continuous.

1. First you can see the pulse value flashing, and by pressing [**CH1+**] or [**CH1-**] you can set the pulse value. Pressing the [**M**] button will save this setting and move to the next setting.

2. The right side wave sign will flash, at the same time either ON or OFF will show between CH1 and CH2. If you choose ON then CH1 and CH2 have different settings and you will continue on to configure the CH2 settings. If you choose OFF, CH1 and CH2 settings will be the same and you have now finished setting up program U09.

   - To choose ON go to step 3
   - To choose OFF go to step 6

3. To choose ON press [**CH1+**]. The ON or OFF will disappear and the frequency digit of CH2 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to next setting.

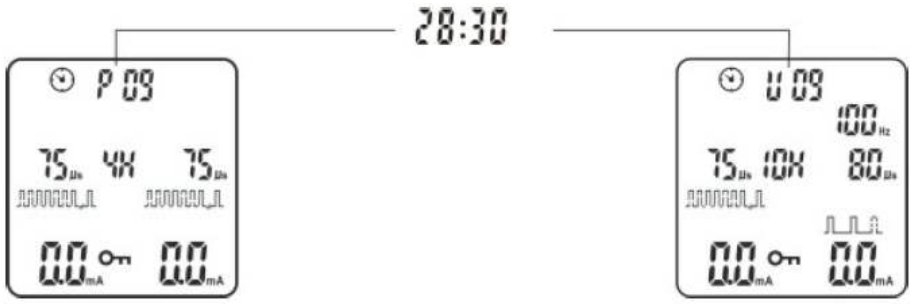
4. The pulse width digit of CH2 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to next setting.

5. Go to step 7.

6. To choose OFF press [**CH1-**]. The output setting for CH1 and CH2 are now the same.

7. If you press the [**M**] button again, then you can re-start the parameter setting.

8. After setting the frequency and pulse width of CH1 and CH2, press the [**OFF**] button, which saves all the settings.



U10 Parameter Setting

In the parameter setting mode, press [**CH2+**] or [**CH2-**] to choose program U10. In this program, you can choose both the CH1 and CH2's output parameter as IM, or CH1 is IM and CH2 is CON (Continuous).

1. First the frequency digit of CH1 will flash. Press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to next setting.

2. The pulse width digit of CH1 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to next setting.

3. The increasing wave duration parameter is now flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the time (0.5Sec-2.5Sec). Pressing the [**M**] button will save this setting and move to next setting.

4. The duration parameter for high intensity is now flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease (0.0S-10.0S). Pressing the [**M**] button will save this setting and move to next setting.

5. The decreasing wave duration parameter is now flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the time (0.5Sec-2.5Sec). Pressing the [**M**] button will save this setting and move to next setting.

6. The pause duration parameter will be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the time (0Sec-10Sec). Pressing the [**M**] button will save this setting and move to next setting.

7. The right side wave sign will flash, at the same time either ON or OFF will show between CH1 and CH2. If you choose ON then CH1 and CH2 have different settings and you will continue on to configure the CH2 settings. If you choose OFF, CH1 and CH2 settings will be the same and you have now finished setting up program U10.

8. To choose ON go to step 10

9. To choose OFF go to step 13

10. To choose ON press [**CH1+**]. The ON or OFF will disappear and the frequency digit of CH2 will flash, press [**CH1+**] to increase or [**CH1-**] to decrease the frequency (One step of frequency is 1 Hz. Pressing either of these buttons down continuously allows you to adjust the steps in increments of 10 Hz). Pressing the [**M**] button will save this setting and move to next setting.

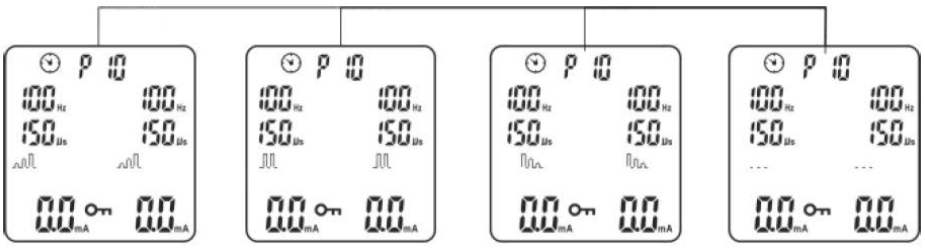
11. The pulse width digit of CH2 will now be flashing. Press [**CH1+**] to increase or [**CH1-**] to decrease the pulse width. (each pulse width step is 1uS, pressing either of these buttons down continuously allows you to adjust the steps in increments of 10uS). Pressing the [**M**] button will save this setting and move to next setting.

12. Go to step 14.

13. To choose OFF press [**CH1-**]. The output setting for CH1 and CH2 are now the same.

14. If you press the [**M**] button again, then you can re-start the parameter setting.

15. After setting the frequency and pulse width of CH1 and CH2, press the [**OFF**] button, which saves all the settings.



Chapter 5. Accessories

5.1 Cables

There are 2 pairs of cables supplied with the device, 1 cable for each channel. Please contact your distributor if the cables need replacing.

5.2 Batteries

The AH-TU2 is supplied with 4 alkaline AAA batteries.

5.3 Treating the irritated skin

If any skin irritation appears when using the electrical stimulation therapies it can be treated effectively with a special TENS cream. This cream helps to reduce irritation and allows the skin to recover quickly. This cream does not harm the electrodes and does not interact with the flow of the currents through the skin. This cream is not supplied with your AH-TU2.

5.4 Disposable electrodes

Our reusable disposable electrodes are ready-to-use, straight out of the pack. After use immediately return the electrodes to their backing strip and seal in their bags. Store the electrodes in the refrigerator to extend their usable lifetime. If the electrodes start to loose their adhesive power wet the black gel side with water before and after use. If the internal metal electrode starts to show the electrode must be discarded immediately. Replacement electrodes and leads are available from your distributor.

Chapter 6.Contents of package

The AH-TU2 stimulator includes the following accessories:

- AH-TU2 nerve stimulator
- Set of cables (2pr)
- Batteries (4) – AAA alkaline
- User manual
- Electrodes (1 x 4 pack)
- Carrying case (1)

Chapter 7.Technical information

Model : AH-TU2

Number of channels: Two independent channels

Waveform: Square wave-form single phase without a direct-current component.

Intensity: 0-70mA, current source, continuously interchangeable (<15% tolerance with an intensity between 500 and 1k ohm)

Frequency: 1-175Hz <15% tolerance

Pulse width: 30uS-300uS <15% tolerance

Power: 4 AAA type batteries, (alkaline supplied)

Dimensions: 141 (L) x 63 (W) x 18 (H) mm

Weight: 91 grams (without batteries)
115 grams (with batteries)

Operating range:

Temperature Range: 4°C - 35°C

Air humidity: <70%, no condensation

Storage and transport conditions:

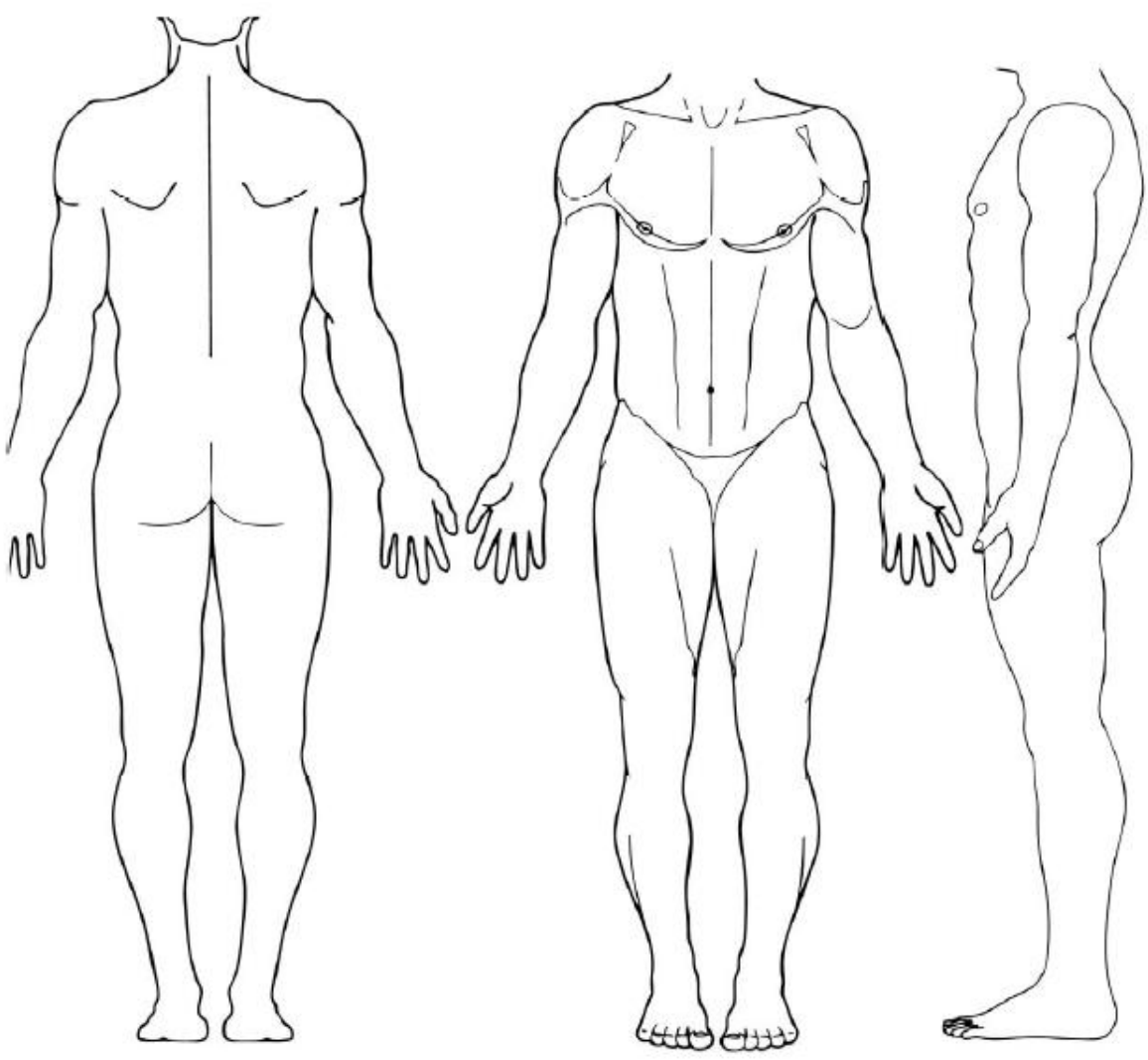
Temperature: 0°C - 50°C

Air humidity: <90%, no condensation

CE This product adheres to Directive 93/42/EEC of the Council of 14 June 1993 concerning medical supplies.
Type BF. The device offers protection against electric shocks, under permitted leakage current.

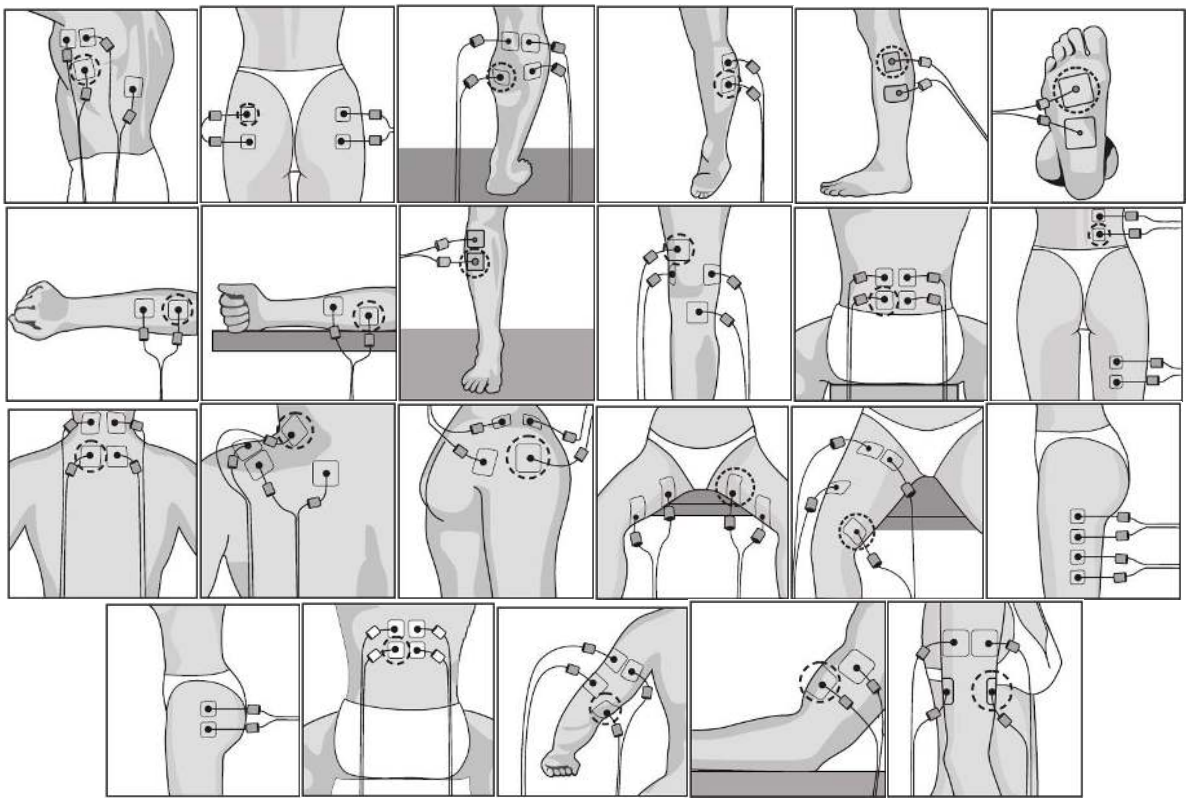
Electrode Placement

(As recommended by your medical practitioner)



Example Electrode Positions

The following diagrams are suggestions only and may not be suitable for your problem or treatment. Please refer to your doctor or medical specialist for advice before using any of the following diagrams.



AH-TU2

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