# KETTLER

## Computer- und Trainingsanleitung

### ST 2610-9



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**FREIZEIT MARKE KETTLER**

**Operating Instructions for the Training Computer with Digital Display (ST2610-9)**



## Design features

### Symbols:

| | | |
|---|---|---|
| 1 | P | no training: ready to accept default values |
| 2 | SCAN | automatic display-change |
| 3 | ODOMETER | display of overall height |
| 4 | FREQUENCY | display of step frequency |
| 5 | TIME | display of training time |
| 6 | STEPS | display of steps |
| 7 | KILOJOULE | display of energy consumption |
| 8 | PULSE | display of current pulse |
| 12 | Note | acoustic step-frequency default active |
| 15 | KM | |
| 17 | Heart | flashes in time with the pulse beat |

### Values:

| | | |
|---|---|---|
| 9 | Large display | Room temperature [0 - 40o C] |
| | | Odometer [0 - 999.9 km] |
| | | Fitness score [F 1.0 - F 6.0] |
| 10 | Step frequency | 0 - 99 [steps/minute] |
| 13 | Time | 0:00 - 99:59 [min:sec] |
| 14 | Steps | 0 - 9999 |
| 16 | Energy consumption | 0 – 9999 [kj] |
| 18 | Pulse | 50 - 199 [beats/minute] |

### Keys:

| | |
|---|---|
| Minus-key | Reduce values (return to previous display area) |
| Set-key | Function key for display [**default, change, reset**] |
| Plus-key | Increase values (forward to next display area] |
| Recovery-key | Function key [**to establish fitness score**] |

### Connections (front)

| | |
|---|---|
| Jack | for the ear-clip |

### Connections (rear)

| | |
|---|---|
| Jack (bipolar) | for the speed sensor |
| Battery compartment | 2 batteries: round cell 1.5 volt, LR6 AA |
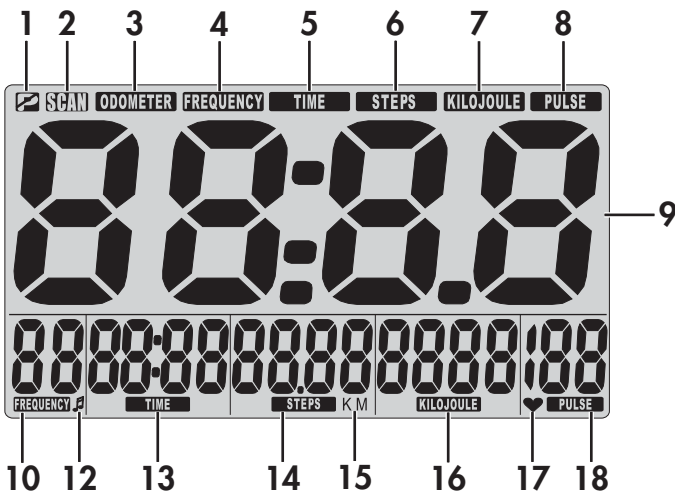


## 1.0 Displays pre-training

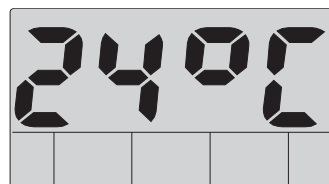| | |
|---|---|
| 1.Room temperature | Figure 1 [before and after training] |
| 2.Full display | Figure 2 [after commencement of training or depression of key, 1 sec.] |
| 3.Overall height | Figure 3 (Duration of display: 10 seconds or key] |
| 4.Ready for training | Figure 4 [with Set-key] |



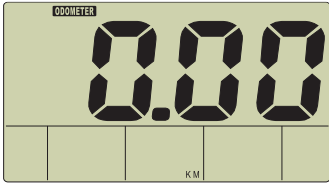Figure 1 Room temperature          Figure 2 Full display
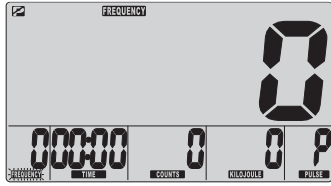
Figure 3 Overall height



Figure 4 Ready for training: frequency flashing

## 2.0 Recording pulse beat

This training computers offer two options for recording pulse beat:
1. with the ear clip
2. with the Cardio Puls Set (available as an accessory from specialist dealers)

You have the system set at 'Ready for training' (Figure 4).

**Recording pulse beat using the ear clip**
Insert the ear clip into the jack
Rub an ear lobe to stimulate blood circulation
Attach the ear clip to the ear lobe

**Recording pulse beat using the Cardio Puls Set**
Please refer to the Directions for Use

**Display of pulse rate**
The 'heart' symbol flashes keeping time with your pulse beat
The pulse beat is displayed as a value (18)

## 3.0 Training without default-setting of training data

Commence training. Counting is **upwards** for all values.

## 4.0 Training with default-setting of training data

### The correct pulse rate for training [aerobic zone]

The basis for selecting the pulse rate for training is age. There is a "correct", so-called aerobic training range to suit every age (rough formula: 180 less age), which is characterised by an upper and lower pulse-rate limit (+/- 10 beats). Ideally, the pulse rate during training should always lie within the aerobic zone. The maximum pulse-rate frequency (200 less age) should not be exceeded. The following diagram applies for healthy persons.
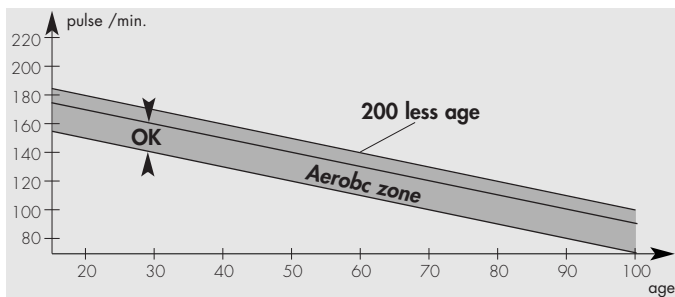


Setting **Step frequency** (10), **Time** (13), **Steps** (14), **Kilojoule** (16) **Pulse-rate limit** (18).

The symbol **P** (1) (Figure 4) appears in the top left of the display before training commences or if it is interrupted. Press the **Set**-key, which will place you in default mode, and using the **+** or **−** key, set the requested value.

The adjustable values are indicated by means of **flashing segments**.

By **keeping** the **+/−** key **depressed**, you can **fast-forward or fast-reverse** the default values.

By pressing the **+/−** keys **together**, the **value** will **return to zero**.

Pressing the **Set**-key will take you to the **next default-settings**.

Having carried out the default-setting for the pulse rate, you will arrive in 'ready-for-training' mode by pressing the **Set**-key, however all of your default-settings will be displayed (Figure 11).

By **keeping** the **Set**-key **depressed**, you will be returned to **Full display** status (**reset function**) (Figure 2).

### Additional remark

If you do not key in a default-setting within 4 minutes, the display will transfer to Room temperature (Figure 1).
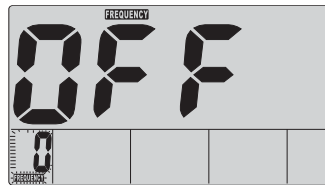


Figure 5
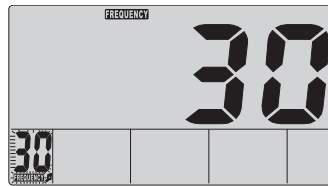


Figure 6



Figure 7
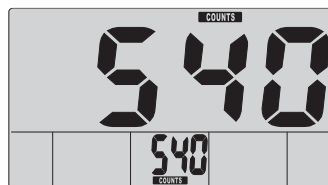


Figure 8



Figure 9
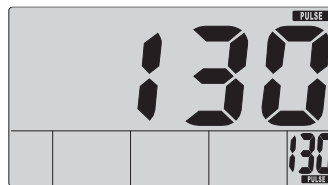


Figure 10
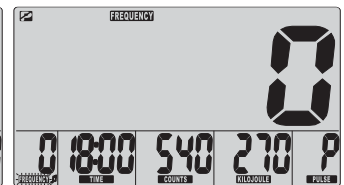


Figure 11

| Figure 5: | Frequency default-setting starts at "OFF" |
| Figure 6: | Frequency default-setting: e.g. 30 beats per minute |
| Figure 7: | Default-setting Time: e.g. 18 minutes |
| Figure 8: | Default-setting: e.g. 540 steps |
| Figure 9: | Default-setting Energy Consumption: e.g. 270 kilojoules |
| Figure 10: | Default-setting Pulse-rate limit: e.g. 130 pulse beats |
| Figure 11: | 'Ready-for-training' mode with all default-settings displayed |

### Function

Commence stepping action. All default values (with the exception of the pulse-rate limit value) will count **backwards**, will flash for a few seconds when they reach zero and will then continue to count as of the default value upwards. If your pulse beat exceeds the pulse-rate limit per default, the **Pulse**-value will flash by way of warning, and you will hear a **bleep**.

## 5.0 Display in training

When you have commenced training, automatic display-change **SCAN** (symbol 2 in the display) will take place at intervals of 5 seconds. You can de-activate it by pressing the **Set**-key. Using the **+/−** key, you can transfer forward or back to the next or previous display area. If you have activated the step-frequency default-setting note (12) in the display, a bleep will sound which will coincide with the step-frequency per default-setting. This is intended to help you keep time.

By pressing the **+/−** keys **togethe**r, you will de-activate the acoustic step-frequency, and the note (12) is no longer displayed. This is also possible when training is interrupted.

### Additional remark

When a default-setting is reached (excluding pulse-rate limit and step-frequency), it will appear at once in the large display (9).

## 6.0 Display before training, upon interruption/completion of training

If you discontinue the stepping action, the system's electronics identify an interruption of training. Automatic display-change is de-activated. The symbol **SCAN** disappears, **P** is displayed, and the pulse rate is shown in the large display, where it remains. If you do not resume training within 4 minutes, the display switches to **Room temperature** (Figure 1). The **distance** covered is then added up to produce the overall height. All **other** values **are not saved**.

### Additional remark

Using the **+/−** key, you can transfer forward or back to the next or previous display area.

The **Set**-key returns you to input mode, in the process of which all previous training data and default-settings are deleted.

## 7.0 Display upon resuming training

Proceed with training. The **values resume counting**.

## 8.0 Recovery pulse rate measurement

The training computer is equipped with a recovery pulse rate function. This enables you to measure your recovery pulse rate once you have completed training. Press the recovery pulse rate key once you have completed training. The computer will measure your pulse rate over a period of 60 seconds, counting in reverse order (Figure 12). After that, a fitness score is displayed accompanied by an **F** (Figure 13). The calculation procedure is explained under 9.0 General information. If the pulse-rate measurement procedure is interrupted, **P** together with **E** for Error message are displayed instead of a value (Figure 14). If you press the Reco-

very-key, the display of current training data reappears.
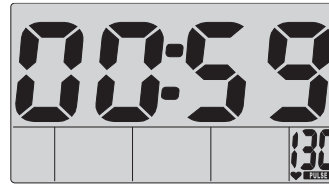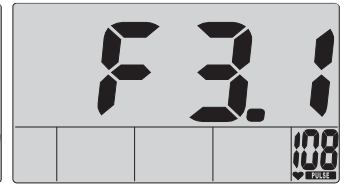


Figure 12                    Figure 13
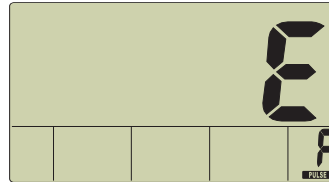


Figure 14

Figure 12: Recovery pulse rate measurement with reverse-motion timing ((0:60 - 0:00)
Figure 13: Display of fitness score
Figure 14: No pulse rate identified for recovery pulse rate measurement procedure

### Additional remark

If no pulse value is displayed, the recovery-pulse function is not carried out.

## 9.0 General information

### Calculation of overall height
1 step action equates to a height of 0.19 metres.

### Calculation of kilojoules
According to information available to us from the field of Sports Medicine, energy is consumed as follows during step-action training: 1 hour of step-action training uses up 2,500 kj based on a step-frequency of 90 steps per minute. 1,000 steps equate to 465 kilojoule.

This calculation is based on medium load and changes only where the step-frequency is varied.

### Calculation of fitness score
The computer calculates and evaluates the difference between the load pulse and the recovery pulse and arrives at its "fitness score" by applying the following formula:

$$\text{Note } (F) = 6 - \left( \frac{10 \times (P1 - P2)}{P1} \right)^2$$

P1 = Load pulse            P2 = Recovery pulse
Score of 1 = very good     Score of 6 = poor

Physical fitness can be monitored easily and quickly by comparing the load pulse with the recovery pulse. The fitness score is an orientation value, which reflects your ability to recover following physical strain. Before pressing the recovery pulse rate key to work out your fitness score, you should continue exercising within your exertion range over an extended period, i.e. at least 10 minutes. If you engage in regular exercise of the cardiovascular system, you will discover that your "fitness score" will improve with time.

### Information on measuring pulse rate
Calculation of the pulse rate commences when the heart in the display flashes in time with your pulse beat.

**With ear clip**

The pulse sensor operates with infrared light and measures the changes in the light transmission ratio of your skin, which are triggered by your pulse beat. Before you attach the pulse sensor to your ear lobe, rub it vigorously 10 times to stimulate the blood circulation.

**Avoid disruptive factors**

- Attach the ear clip securely to your ear lobe and look for the best spot at which to take the reading (heart symbol flashes uninterruptedly).
- Do not exercise where you are directly exposed to strong light, e.g. neon light, halogen lighting, spotlights, sunlight.
- Ensure that neither the ear clip nor its cable can be subjected to vibration or shaking of any description. Always secure the cable to your clothing with a clip, or better still to a headband.

**Using the Cardio Puls Set (accessory)**

Please refer to the Directions for Use.

**Pulse-rate display malfunction**

Should problems arise in recording pulse-rates, check the above points again.

Check the battery voltage.

**Malfunction in the training computer**

Make a note of the height status. If the training computer appears to be performing peculiarly, remove the batteries, check the battery voltage and put the batteries back in. A battery-change will cause the overall height saved to be lost.

## 10.0 Training instructions

The KETTLER Power Stepper enables you to exercise in particular the cardiovascular system as well as your thighs and gluteal muscles.

### Important tip

Before you embark on your training programme, check with your GP whether the use of the KETTLER Power Stepper for training purposes is appropriate in your case. Your personal training programme should then be structured along the lines indicated by the medical findings. We recommend the following training guidelines for persons with cardiovascular disorders.

### Training guidelines

Training using the KETTLER Power Stepper should be conducted in accordance with the principles of endurance training. This means that that the individual who is training does so applying a moderate level of effort over an extended period of time. The step-frequency you opt for will determine the level of intensity of your training programme. In other words, the faster you climb, the more intensive the training. Particular attention should be given at all times, however, to ensuring that you do not overtax yourself and expose yourself to excessive strain. Climbing stairs is an extremely strenuous exercise, and it is a considerable strain on the cardiovascular system. It is advisable, therefore, to check during training whether or not the level of intensity which you have opted for is suitable. This you can do by measuring your **pulse rate**.

| 180 less age |
| :---: |

is taken as a rough formula for establishing whether or not the individual's pulse rate is as it should be.

This implies that a 50-year-old person, for example, should conduct his/her endurance training assuming a pulse rate of 130.

Many recognised experts from the field of Sports Medicine take a favourable view of training recommendations based on these calculations. Your settings in training, therefore, for stepping frequency and resistance should be such that you reach your ideal pulse rate applying the above rough formula.

**It should be pointed out, however, that these recommendations only apply in the case of healthy persons and not in the case of those who suffer from cardiovascular disorders!**

### With regard to extent of strain

The beginner increases the extent of strain which accompanies the training programme gradually. The first few training sessions should be relatively short ones and should include breaks.

Sports Medicine today favours the following load factors from the point of view of enhancing fitness levels:

| Training frequency | Duration of training |
| --- | --- |
| daily | 10 minutes |
| 2-3 times a week | 20-30 minutes |
| 1-2 times a week | 30-60 minutes |

Beginners should not start off with training sessions of 30-60 minutes. Beginner training can be structured as follows for the first 4 weeks:

| Training frequency | Extent of training session |
| --- | --- |
| **1st week** | |
| 3 times a week | 2 minutes of training<br>Break of 1 minute for physical exercises<br>2 minutes of training<br>Break of 1 minute for physical exercises<br>2 minutes of training |
| **2nd week** | |
| 3 times a week | 3 minutes of training<br>Break of 1 minute for physical exercises<br>3 minutes of training<br>Break of 1 minute for physical exercises<br>2 minutes of training |
| **3rd week** | |
| 3 times a week | 4 minutes of training<br>Break of 1 minute for physical exercises<br>4 minutes of training<br>Break of 1 minute for physical exercises<br>3 minutes of training |
| **4th week** | |
| 3 times a week | 5 minutes of training<br>Break of 1 minute for physical exercises<br>4 minutes of training<br>Break of 1 minute for physical exercises<br>4 minutes of training |

For the purpose of keeping a record of your own personal training performance, training values achieved can be entered in the performance schedule.

5 minutes of physical exercises before and after each training session prove useful from the point of view of warming up and cooling down. There should be one training-free day between any

two training sessions if you prefer the 3-times-a-week training programme of 20-30 minutes each later on. Apart from that, there's a lot to be said for one 10-minute session daily on the KETTLER Power Stepper.

The sequence of movements when training using the KETTLER Power Stepper can be compared with climbing the stairs and is one we should all be familiar with.

Nevertheless, one or two points merit particular attention:

• Always ensure before training commences that the appliance is correctly set up and securely positioned.

• Take the handrails firmly in both hands when mounting the appliance.

• Ensure a secure footing on the treads by selecting suitable footwear.

• Do not train with no hands during the beginner stage. A sound command of the sequence of movements required must first be secured and consolidated. When you feel confident enough about the climbing motion, you can switch over gradually to letting go of the handrails and to swinging your arms by your sides as you would when climbing the stairs. This method of training incorporates a highly effective way of exercising the entire body, serving also to fine-tune the body's sense of co-ordination and balance.
**Please note:** This method of training is only suitable for the advanced and top-fit athlete with staying power and a sound command of the sequence of movements involved.

• Set the stepping resistance at the adjusting rings on the oil-pressure damping tubes (Step 1-12) to meet individual requirements and to accommodate personal body weight.

• Use of the upper and lower limits stops of the damping tubes and the tread members should be avoided in order to protect joints and treat the oil-pressure damping tubes with the appropriate level of care. Avoid stretching the knee joints to the full during training, but instead begin the return action just before this point.

• Training to music or in front of the television can help to boost motivation.

Ensure when training that your step-frequency is consistent and that you are securely positioned on the appliance.
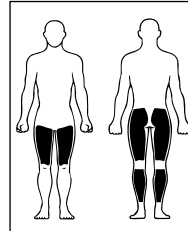


It is primarily the muscles of the lower extremities which respond to training using the KETTLER Power Stepper.

The stair-climbing motion mainly activates the muscles of the posterior, the thighs and the calves and serves to strengthen them, in particular where the individual has had little prior exposure to training and exercise. This is generally coupled with a tightening of the tissue in the parts of the body concerned. In addition, training using no hands at a more advanced stage can assist in enhancing the body's sense of co-ordination and balance.

All in all, the KETTLER Power Stepper offers you an excellent opportunity to improve your fitness from the point of view of stamina and strength, and it goes without saying that a healthy lifestyle which is reflected is a healthy diet cannot help but make the ultimate success enjoyed in training complete.

| D Datum | Ruhepuls | P 1 Belastungspuls | P 2 Erholungspuls | Belastungs-stufe | Zeit (min.) | Entfernung (km) | Energie-verbrauch | Fitnessnote |
|---|---|---|---|---|---|---|---|---|
| GB Date | Restpulse | Stress pulse | Recovery pulse | Slope | Time (min) | Distance (km) | Energy-consumption | Fitness Mark |
| F Date | Pouls au repos | Pouls en charge | Pouls de récupération | Angle d´inclination | Temps (min.) | Distance (km) | Dépense d´énergie | Note |
| NL Datum | Rustpols | Belastings-pols | Ontspannings-pols | Hellingshoek | Tijd (min.) (min.) | Afstand (km) | Calorieen-verbruik | Waard. cijfer |
| E Fecha | Pulso en reposo | Pulso bajo esfuerzo | Pulso de recuperación | Escalón de carga | Tiempo (min.) | Distancìa (km) | Consumo de energía | Nota |
| I Data | Polso riposo | Polso affaticamento | Polso ripresa | Fase dicarico | Tempo (min.) | Percorso (km) | Consumo energetico | Voto |
| PL Data | tętno spoczynkowe | tętno przy obciążeniu | tętno w fazie odpoczynku | stopień obciążenia | Czas (min.) | odległość (km) | Zużycie energii | Ocena sprawności |

| Ⓓ Leistungstabelle | | | | | | | |
| ⒼⒷ Performance table | | Ⓕ Tableau de performances | | | ⓃⓁ Prestatietabel | | |
| Ⓔ Tabla de rendimiento | | Ⓘ Tabella delle prestazioni | | | ⓅⓁ Tabela wyników | | |

| Ⓓ Datum | Ruhepuls | P 1 Belastungspuls | P 2 Erholungspuls | Belastungs-stufe | Zeit (min.) | Entfernung (km) | Energie-verbrauch | Fitnessnote |
|---|---|---|---|---|---|---|---|---|
| ⒼⒷ Date | Restpulse | Stress pulse | Recovery pulse | Slope | Time (min) | Distance (km) | Energy-consumption | Fitness Mark |
| Ⓕ Date | Pouls au repos | Pouls en charge | Pouls de récupération | Angle d´inclination | Temps (min.) | Distance (km) | Dépense d´énergie | Note |
| ⓃⓁ Datum | Rustpols | Belastings-pols | Ontspannings-pols | Hellingshoek | Tijd (min.) (min.) | Afstand (km) | Calorieen-verbruik | Waard. cijfer |
| Ⓔ Fecha | Pulso en reposo | Pulso bajo esfuerzo | Pulso de recuperación | Escalón de carga | Tiempo (min.) | Distancìa (km) | Consumo de energía | Nota |
| Ⓘ Data | Polso riposo | Polso affaticamento | Polso ripresa | Fase dicarico | Tempo (min.) | Percorso (km) | Consumo energetico | Voto |
| ⓅⓁ Data | tętno spoczynkowe | tętno przy obciążeniu | tętno w fazie odpoczynku | stopień obciążenia | Czas (min.) | odległość (km) | Zużycie energii | Ocena sprawności |
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| Datum | Ruhepuls | P 1 Belastungspuls | P 2 Erholungspuls | Belastungs-stufe | Zeit (min.) | Entfernung (km) | Energie-verbrauch | Fitnessnote |

# FREIZEIT MARKE KETTLER

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