

PACE GENERATOR

RPG-1



I. General specifications

The equipment is housed in a machined ABS box of dimensions 90x65x21 mm.

The power is supplied by two AA-type primary cells (1000 – 2500 Ah)

There are 3 push buttons (UP, DWN, SET), one 8-character LCD display with backlight, a buzzer, a 3,5 mm earpiece jack and a volume control knob with ON-OFF switch.

The consumption is such as to permit at least 5 hours of service, even when using saline cells (which are supposed to be somewhat cheaper)

There are up to 4 pre-programmable speeds. If less than 4 speeds are needed, the unused speed memories will be set to zero (for faster scrolling of the remaining ones).

The distance counter will show distances up to 99 990 m in 10 m steps.

The display will show the distance for 2 seconds after completion of each 100 m step, then for 1 second the active speed programme as V1:xx.xx to V4:xx.xx and then shall go back to the distance indication mode until the next step + 2 seconds.

A 1-second beep is emitted by the buzzer at the beginning of every step and its volume can be adjusted at any time. **The use of an earpiece will cut the buzzer off.**

No scrolling or other manipulation shall ever interact with the distance counting (according to the active speed value) and any order for change of the latter shall only take place on the subsequent step. Counting will only stop if the SET button is pressed for more than 3 seconds or if the equipment is switched off.

When scrolling, the display shall show the active speed for no longer than 1 second and shall change immediately on every scroll button pressure. **If the scroll button is kept pressed, the auto-scrolling shall be done at a rate of 0,9 s per step. The counting and the beep is done according to the active speed. The display will go back to the distance indication mode no later than 1 second after the scroll button release and the last shown speed will become active. Counting will continue at the new rate thus resulting in a 100 m transition section counted partly with the old and partly with the new obligatory speed reference.**

The programming of the speed table is done as follows:

To enter the programming mode, the counter must be reset to zero. Then by pressing the SET button for at least 3 seconds, **the display will show “TDxxx.xx” and the first “x” will flash. “TD” stands for “true distance” and “x” for any digit 0-9. If a change is needed, a scroll button must be pressed within 2 seconds, otherwise the next-right digit will flash and so on, cyclically, until the “SET” button is pressed. If the distance entered is out of range (100 +/- 30%), a warning will be issued and the input value will not be accepted.**

Thereafter, the display will show for 2 seconds $F=xxx.xx$ ($F = 3,6*TD$). The true distance will be stored in a special memory location which shall be visible only in programming mode. In counting mode, speed scrolling shall not include this location.

Thenceforth, the display will indicate V1:xx.xx and the x10-km digit will flash. Again, if a change is needed, a scroll button must be pressed within 2 seconds, otherwise the x1-km digit will start flashing and so on cyclically unless the SET button is pressed. Then the V2 memory cell will be shown and the x10-km digit will be flashing, etc., etc. If no change is needed for a memory cell, just a push on the SET button will bring on the next memory cell. By pushing the SET button, one can cyclically scroll the speed memory cells, finally stopping at the first one to be used. After 3 seconds of button inactivity, the equipment will go to the start position, namely with the last selected speed Vx and the distance counter set to zero. **In this position the display will cyclically show the active speed and the distance** If a change is needed, a scroll button must be pressed within 2 seconds, **counter (set to zero).**

From that point on, pushing a scroll button (UP or DWN) shall start the counting. Alternatively, pressing for more than 3 seconds the SET button will lead to entering the programming mode again. Switching the power off will not affect the speed table and when switched on, the equipment will be in the start position waiting for a start signal (UP/DWN) or programming (SET). As previously stated, the scroll buttons will change the active speed only when the counter is running. When the counter isn't running, the speed scrolling is done by entering the programming mode first and pushing the SET button the necessary number of times **(1 to 4, TD and V1 to V4).**

II. Technical specifications

1. Speed table depth	4 memory cells
2. Speed range	20 – 60 km/h (0 if not used)
3. Speed setting precision	10 m/h
4. Speed indication format	xx.xx (4 digits plus decimal point)
5. True distance input accuracy	1 cm
6. True distance indication format	xxx.xx (in meters)
7. True distance range	70 – 130 m
8. Display type	8-character LCD with backlight
9. Display dimensions	48 x 12 mm
10. Character size	9,22 x 4,84 mm
11. Controls	3 pushbuttons + volume knob w/switch
12. Distance indication range	0 – 99 900 m (or 0 – 99,900 km) ?
13. Distance indicator resolution	10 m
14. Timing precision	+/- 50 ppm (+/- 10 ppm)
15. Beep frequency and duration	2 kHz / 1 second
16. Beep position in time	at the beginning of each 100 m step
17. Earpiece interface	jack 3,5 mm – 16 to 200 Ω
18. Dimensions	90 x 65 x 21 mm.
19. Weight	150 g
20. Power supply	2 x AA cells
21. Autonomy	5 h minimum
22. Temperature range	-10 to +50 °C

III. Model V00.01 (2008 and subsequent) enhancements

After the “F” statement, i.e. before “READY”, there is an “OFFSET” message, then “O:00,000” is shown. Now you have 2 options:

- if you don't want to use this feature, i.e. Offset=0, you can press the UP or the DWN button. That leads you to “READY” and the subsequent counting starts at 00,000 km (miles).
- If you want to program an offset between 00,000 and 99,990 km (miles) you must press the SET button for 3 seconds. You get the “Ent. OFS” message and then O:00,000. From that point on, you can use the UP and DWN buttons in the usual way to program the desired offset. Press SET when the correct offset is shown. There is no timeout this time because the SET button can be used to get out. So, pressing the SET button leads you again to the “READY” message, but now you are shown in turn the previously selected speed V1 to V5 and the offset, which is also the starting point for subsequent counting.

When programming the offset, holding the UP button down progressively accelerates counting (in steps of 0,010) and stops at 99,990. Holding the DWN button down does the same backwards and stops at 00,000.

If you start at 99,990, the first beep will be heard at 00,000, then at 00,100, etc.

The distance counting is correct up to over 262 km (miles), offset included. Hundreds are not shown, as was previously the case, for lack of character position in the standard display.