Compaction measurement for
vibrating rollers

CompactoBar™

ALFA-040-050/E

GEODYNAMIK

Contents

1 Introduction

With your CompactoBar™ you can do the following things:

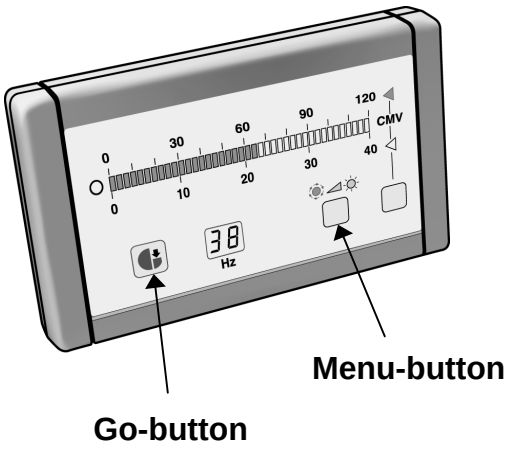
- Measure the instantaneous Compaction Meter Value, CMV, which is a relative value for the bearing capacity or modulus of elasticity of the ground. The CompactoBar also records and displays the minimum, the maximum and the mean CMV of the last measured strip.
- Measure the drum vibration frequency in Hertz.
- Get indication when the roller is coming close to operating in "double-jump" mode.

2 Turning on the unit

The CompactoBar™ does not have an on/off button but is activated by turning on the rollers ignition or by starting the roller engine. After doing so the CompactoBar™ enters into **sleep mode**, which is indicated by two horizontal lines in the numerical display.

Your CompactoBar™ is now ready for either set-up or measurement of compaction data. If something else (or nothing) is shown on the display - go to section 6 **Error indications.**

3 Setup



3.1 CMV threshold

- Push the Menu-button until the middle symbol lights up.
- The threshold value can be increased by pressing the Go-button. By releasing the Go-button and pressing it again the threshold value is decreased.

The CMV threshold value is indicated by the bargraph display and shown on the numerical display during the setting operation.

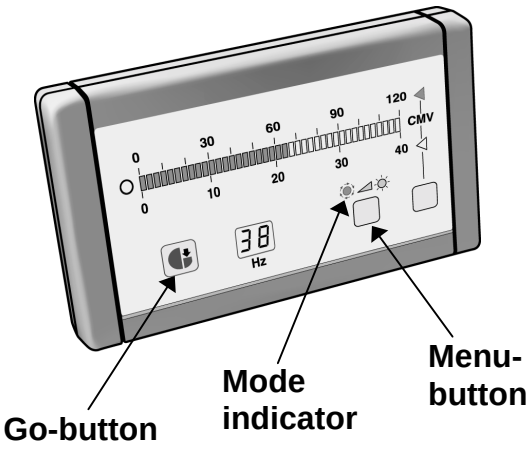
3.2 Display intensity

- Push the Menu-button until the last symbol is illuminated.
- The intensity can be set to five different levels by pressing the Go-button.

The intensity can be read on the numerical display. In order to adjust the real time clock, see section 7.

4 Start/stop measurement

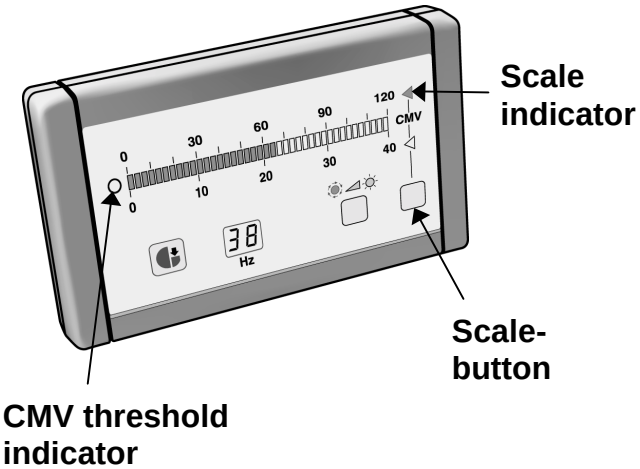
- Make sure that the first symbol is illuminated on the Mode-indicator. If not, press the Menu-button repeatedly until it does.



- Position the roller a few meters **ahead** of the so called start-line where the compaction/measurement is going to start. Set the desired vibration amplitude and frequency on the roller. Start the roller and set a speed, which is kept constant during the measurement.
- When the start-line is passed, press the Go-button once.
- The measurement is stopped by pressing the Go-button once again.

5 Understanding the readout

On the bar-graph you should now be able to see how CMV is varying along the strip. Please note that CompactoBar™ is equipped with two scales and that the upper digits are to be read when the upper scale indicator is illuminated. On the upper scale, 0 - 120, each scale segment has a numerical value of "3". On the lower scale, each segment has a value of "1".



- If none or very few segments are illuminated on the bar-graph when the upper scale is selected, a change of scale shall be made. This is done by pressing the Scale-button on the right. The change is confirmed by the changing scale-indicator. Conversely, if almost all segments are illuminated when the lower scale is chosen, change scale to the upper scale by pressing the Scale-button once.
- If the whole bar-graph suddenly starts to flash this is an indication of the roller coming closer to operate in a so called double-jump mode. This is very undesirable but double-jump operation can most times by avoided by lowering the vibration amplitude and changing the vibration frequency if possible. Please note that any measurements taken in double-jump mode must be discarded.
- If the set CMV threshold value is achieved, the green CMV threshold indicator on the left will be illuminated.

- During the whole measurement the numerical display will show the roller frequency in Hertz (Number of vibrations per second)
- After the measurement have been stopped the bar-graph will show a summary of the previously measured strip by three illuminated segments. They represent the minimum CMV, the average CMV and the maximum CMV respectively.

6 Error indications

- If no segment is illuminated in the numerical display and roller ignition/engine is on this might be a serious problem. First make sure that the display intensity is set to maximum. If there is still no segment illuminated ask someone to check the 2 A fuse (F2) which is located on the cable between the CompactoBar™ and the roller. If this does not fix situation, please contact your dealer for assistance.
- If the numerical display shows "lo" during measurement it means that the roller frequency is either too low or too high or that the drum amplitude is too small in order to generate reliable signals for the CompactoBar™ .
- If the numerical display shows "Er" followed by a numerical value directly after power on an error has been detected by the automatic selftest during startup. Report this error code to your dealer.

7 Setting the real time clock

(This feature is only available if your CompactoBar™ is equipped with the optional printer.) By holding the Menu-button down while turning on the roller ignition or engine you will be able to adjust the real time clock.

- After the symbol "Yr" is shown on the numerical display the Menu-button can be released. The "Yr"symbol is shown for a couple of seconds and after that the preset year is shown. This value can now be adjusted in the same way the CMV threshold value is set, see section 3.1
- After setting the desired year push the Menu-button once in order to advance to setting the months. By doing so the symbol "no" is shown on the numerical display. The correct months can now be set in the same way as for the year.
- In the same way as above, use the Menu-button to advance to set the day of the week, the hour and the minutes. By doing so the symbols "dA" (day) "Hr" (hour) and "ni" minutes are shown.
- When the correct number of minutes is set, press the Menu-button once again in order to return into sleep-mode.

8 Specifications

System components: One main unit comprising display, processor and auxiliary electronics , a cable harness and an accelerometer.

Connectors/cables: 200 cm combined power and accelerometer cable harness with addtional 200 cm printer cable, with connectors at ends. Accelerometer with 500 cm cable and connector.

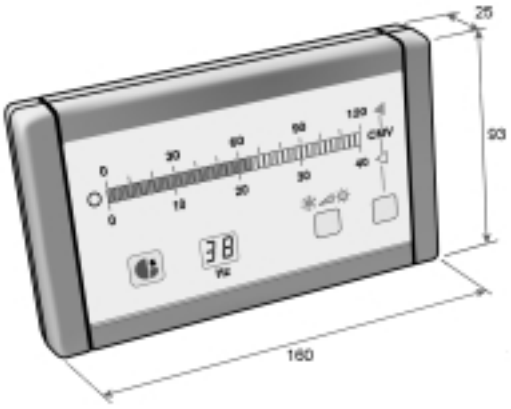
Display type: 40 segments, high luminosity LED bar-graph with adjustable light intensity.

Displayed values: CMV in two alternate scales: 0-40 and 0-120 with manual scaling. Resetable minimum, maximum and mean CMV during registration. Double jump indication by flashing bar-graph

Roller frequency in Hz by two, seven segment LED displays.

Presetable CMV-threshold with green LED indication.

Optional: Kyoline XT-AD thermo-printer.
Adjustable mount.



Mounting in roller:

Panel mounting: Footprint size 160 × 93 mm.

Free mounting in roller by threaded rear holes, 2 × M6.

Can also be mounted by using the optional adjustable mount.

Power supply voltage: 10 – 30 V DC, 20 – 650 mA.

Size and weight:

Main unit: 160 × 93 × 25 mm / 300 g

Accelerometer: 64 × 58 × 34 mm / 950 g incl. cable.

Optional printer: 165 × 140 × 47 mm / 540 g.