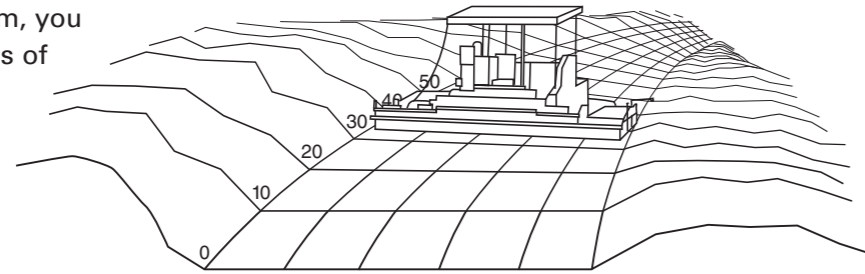


ADVANCED FEATURES

Automatic transitions of cross slope and height

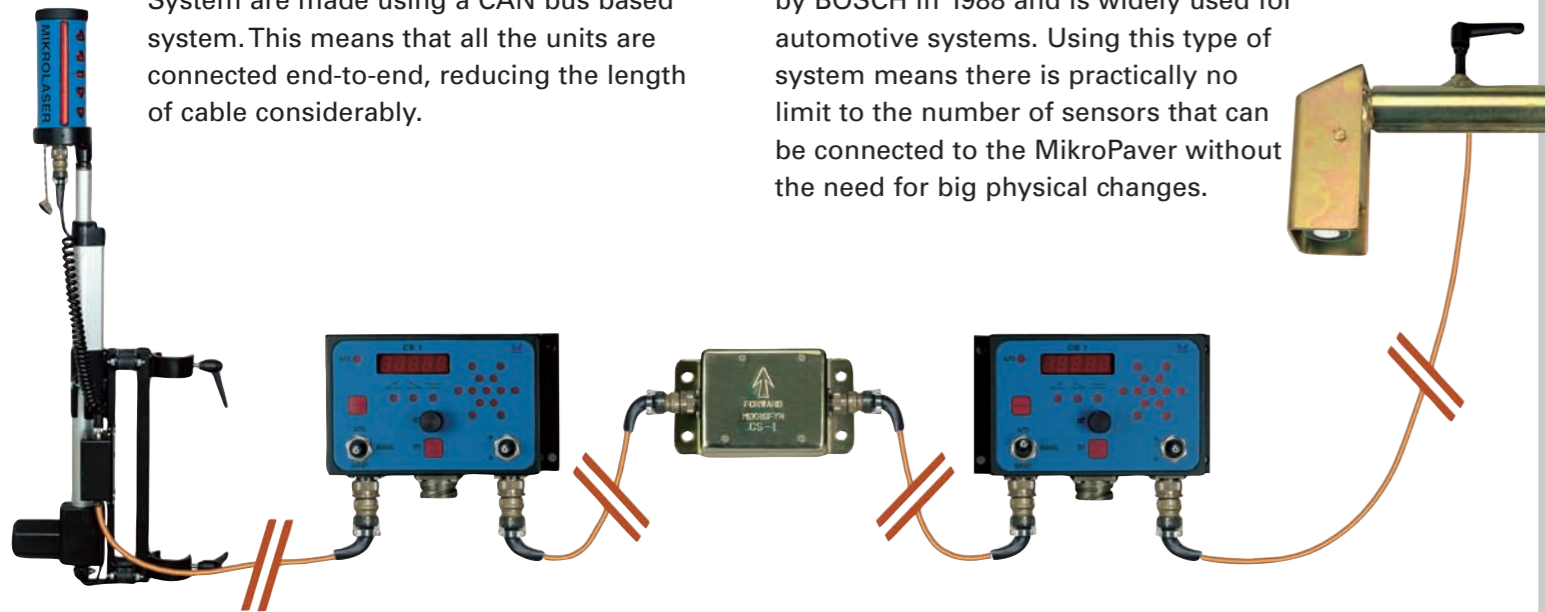
By adding a distance meter to the system, you can let the MikroPaver control transitions of cross slope and height automatically. The start section, interval and data for cross slope and height are easily stored in the CB 1 control box.



CAN Bus

All the connections on the MikroPaver System are made using a CAN bus based system. This means that all the units are connected end-to-end, reducing the length of cable considerably.

The CAN bus based system was invented by BOSCH in 1988 and is widely used for automotive systems. Using this type of system means there is practically no limit to the number of sensors that can be connected to the MikroPaver without the need for big physical changes.



Technical Data

Supply: 12 – 24 V, 0.5 amp., full polarity and load dump protected.
Operating Temperature: -40° C to 70° C.

The Control Box, CB 1:
Size: 160 x 55 x 100 mm.
Weight: 860 g.
Seal: Water resistant, Ip 65.

Cross Slope Sensor, CS 1:
Size: 80 x 120 x 35 mm.
Weight: 800 g.
Seal: Waterproof, hermetically sealed and embedded.
Type: Inclination.
Resolution: 0.01°.
Precision: Typical < 0.1%.

Sonic Tracker, SH 2

Size: 138 x 72 mm.
Weight: 590 g.
Seal: Waterproof, embedded.
Precision: < 1 mm.

Electronic Mast, EM 1:

Size: 970 mm.
Weight: 10.2 kg.
Seal: Waterproof, Ip 67 and embedded.
Input Current: 4 A.
Operating Range: 0 – 500 m radius.
Sensor Pick-up Range: 180 mm.
Band with On Grade: Fine and normal.
Near Centre Bands: 4 channels, decreases the importance of the diameter of the laser beam.

MikroPaver™ at work all over the world



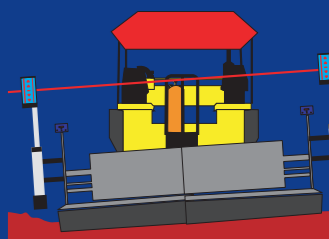
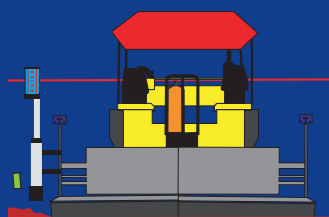
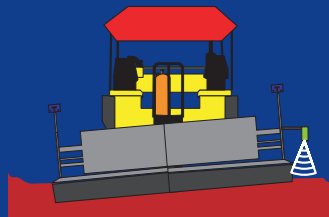
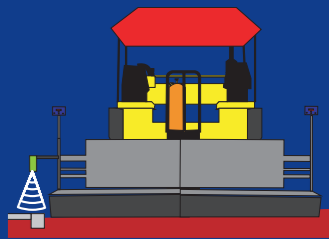
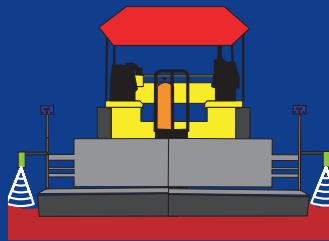
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Since the start in 1987 Mikrofyn A/S has placed itself among the top-five worldwide manufacturers of professional precision lasers and machine control systems. The profits of the business are reinvested in new products and growing the business. Mikrofyn is built upon sound principals of developing and manufacturing state-of-the-art products, supported by experts and cooperating with outstanding professional local distributors.

AUTHORIZED MIKROFYN DISTRIBUTOR:

MikroPaver™

Optimises your work accurately and efficiently



Introduction

The MikroPaver system has been developed to automate the control of cross slope and height of your asphalt paver during your daily work.

The system consists of a number of different sensors, as required, and can easily be expanded.

The Cross Slope sensor is placed in the centre of the system and monitors cross slope from either side.

The SonicTracker is mounted on one end of the screed as part of an extendable arm. The reference line can be the old surface, gravel, a curb or a wire.

The system can be expanded with a Laser sensor, which is mounted on one end of the screed, so that it follows the height of the laser beam.

The system has been developed to work with one or two electronic masts, or a fixed mast. It can also be expanded to work with 3D-MC/GPS via a UCB 1 control box.

CB 1 Control Box

The CB 1 control box has been developed in co-operation with people in the asphalt business, and there has, been a great deal of focus on easy operation, without too many blinking lamps or flashing displays.



Its compact design makes the CB 1 box very easy to mount in a place, where it is both visible to, and within reach of, the operator while the machine is working.

The main functions of the CB 1 box, cross slope and height, have been designed to make both monitoring your work or automating control with the CB 1 easy.

Features

- MikroPaver can be used to control any paver or mill.
- Flexible configuration for different needs.
- Manual or automatic control – the choice is yours.
- Very bright LED display that can be read even in direct strong sunlight.
- CAN bus based interface.
- Very rugged and 100% waterproof sensors (IP67).
- Prepared for GPS and 3D guidance using robotic total station.

CROSS SLOPE SENSOR

The Cross Slope sensor is a very precise electronic sensor, protected by a sturdy galvanised iron housing with markings for direction. The sensor is mounted on the boom between the two screed arms, and is permanently connected to the CB 1 box on both sides. The control box is used to set the desired cross slope before being put in Auto mode. In Survey mode, the current cross slope is shown in the CB 1 display, without the slope being controlled automatically. The cross slope can be displayed in either per cent or per thousand, as required.



THIS IS HOW EASY IT IS TO USE CROSS SLOPE

1. Push the Mode Switch and select cross slope.
2. Set the desired cross slope by turning the Set Knob.
3. Put the MikroPaver in Auto mode.



THIS IS HOW EASY IT IS TO USE SURVEY MODE

1. Select cross slope.
2. Push the Mode Switch down to Survey and then release. The current cross slope will now be shown in the display.
3. If you want to work with this cross slope, then put the MikroPaver into Auto mode, and it will automatically control the cross slope using this setting.



CHANGING THE SETTING IS JUST AS EASY

If you want to change the cross slope setting during operation, then all you need to do is push the Manual Switch up or down while the CB 1 box is in Auto mode. It will store the new value for cross slope, which will also be shown in the display.



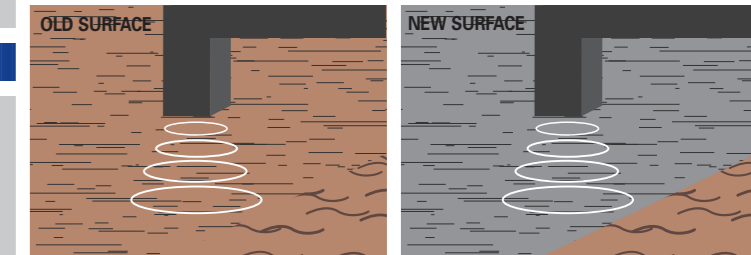
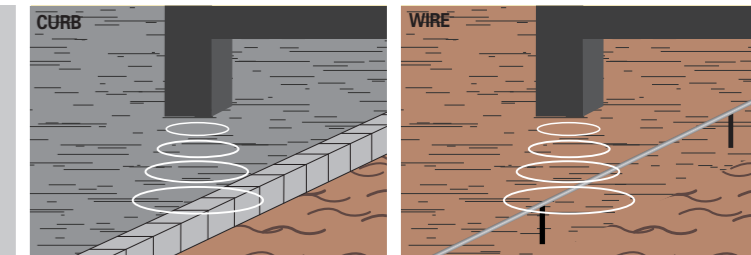
CALIBRATION OF THE SENSOR

Calibration of the Cross Slope sensor is very simple. The machine must run while loaded with material, and cross slope is set to 2%, for example, and in Auto mode. The slope of the road is then measured and the CB 1 box adjusted until the result is satisfactory.



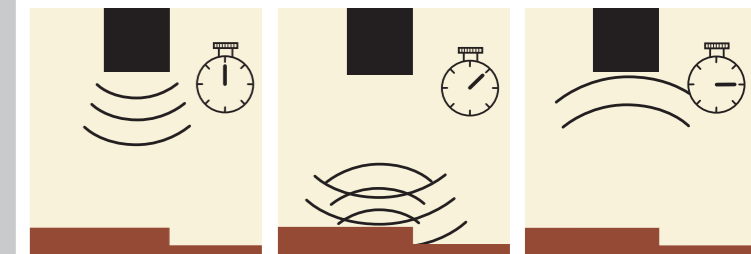
SONIC TRACKER

Using the SonicTracker is very easy and simple. The reference line can, for example, be a curb, the surface of a previous pass, wire, paving slabs, etc. In most cases, the SonicTracker is used as a reference on one side of the machine, and the Cross Slope sensor on the other side.



HOW TO USE THE SONIC TRACKER

1. Push the input selection button to select Sonic Tracker.
2. Place the screed at the desired height.
3. Put the MikroPaver in Survey mode by pushing the Mode Switch down – all the lamps will flash.
4. Check that the current height is correct, put the MikroPaver in Auto mode, and it will automatically keep this height.



HOW THE SONIC TRACKER WORKS

As sound moves at a velocity of about 300 metres per second, it is possible to calculate a distance by measuring the time that a reflected pulse needs to return to its point of source. The MikroPaver measures this time with a precision of 0.000000125 seconds.

The SonicTracker is working on the principle of electrostatic, which has proven to be the most successful method within the line of contractors. To compensate for deviation due to changes in air temperature, you have got the choice of two - either a built-in thermometer or a temperature bail.

FEATURES OF THE SONIC TRACKER

The new SH 2 SonicTracker yields measurements of unsurpassed accuracy with an internal resolution of 1 mm (1/25"). The SonicTracker can use any type of surface or string as reference.

The SonicTracker features a very bright LED display for indication of High, On-Grade, Low and Temperature Bail if mounted. This means, that the operator can move freely around the machine, and still monitor the status of the system.

LASER CONTROL

The MikroPaver has been developed to work with either one or two laser detectors.

THIS IS HOW LASER CONTROL WORKS

An ordinary machine detector (MD 2) is integrated with an electronic mast, which moves the detector up and down. The detector sends information on the position of detected laser beam to the CB 1 box, which then corrects the hydraulics. The entire process is done in less than 1/1000 sec.

FEATURES OF THE EM 1

The Machine Detector which we use for the MikroPaver is one of our most tried and tested products. It has now been on the market for more than a decade.

The electronic mast is of a lightweight construction that is based on reputable and well-tested industrial components, guaranteeing that the mast is of both good quality and high durability.

To ensure a high level of portability, the size and weight of the EM1 have been kept to a minimum. The combined mast and sensor fit easily into the luggage compartment of a car.



CB 1, CONTROL BOX



CS 1, CROSS SLOPE SENSOR



CB 1, CONTROL BOX



SH 2, SONIC HOUSE



SA 1, SONIC ARM



EM 1, ELECTRIC MAST

