Application-Report - Quality Control of Measuring Devices for Clinical Diagnostics

Task:

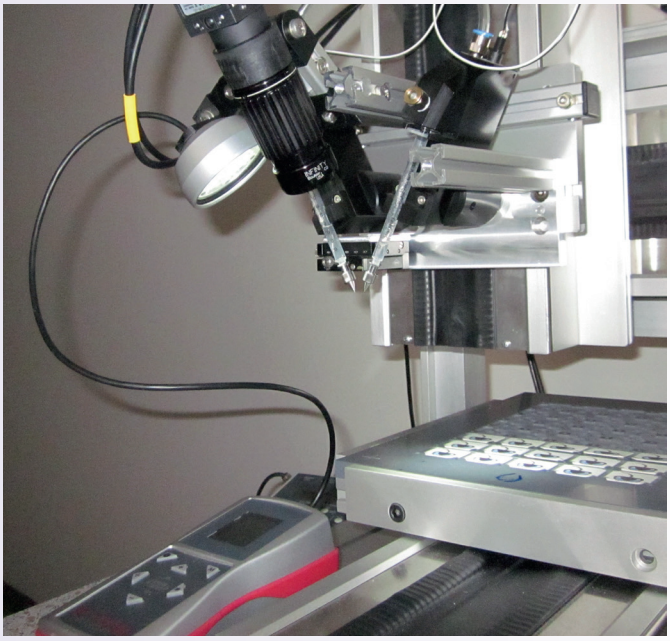
When manufacturing measuring devices for clinical diagnostics, an enzymatic amperometric bio-sensor is the heart of manufacturing.

During the project, a process should be developed for the automated manufacture of these reusable sensors.

Using two parallel operating dispensers, different solutions on applied onto the electrodes. The exact positioning of the solutions drops, they are intensively mixed together. Afterwards, the component solutions are linked up to a homogenous membrane.

For separate focusing of both dispenser jets and the monitoring of coating process, the processes are observed by a triggered camera.

To ensure good lighting of the images at the right point in time, a pulsated, very strong source of light is required.



Dispenser system with camera and stroboscope

Solution:

The stroboscope RT STROBE pocketLED T (A4-3200) was modified according to the requirements in order to fit the application perfectly. This meant replacing the directly connected LED head to the control unit with a cable. The advantage of this modification is that the light unit can be easily positioned on the moving part of the X-Y-Z-table next to the camera.

To ensure synchronized operation of the dispensers, camera and stroboscope, all components are pulsated by an external pulse generator. The stroboscope gets the signal via the input/output socket.

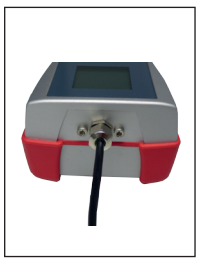
For correct imaging of the flying drops, it is necessary to have a kind of delay time in the camera and stroboscope in comparison to the dispenser pulse.

This can easily be set on the stroboscope by using the „DELAY"-function. It is also possible in addition to the commonly used measuring unit of degree to measure the delay in milliseconds.

For this application, the unit provides big advantages. By having a quick change between the parameters for „DELAY" and „PULSE" (flash duration), which can be made using the four cursor keys, the optimal setting can be found quickly during operation.

YouTube Tutorial

RT STROBE pocketLED T



customized
RT STROBE pocketLED T

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