

Press Release Sensor Instruments

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Tracking the Invisible

Inline Detectors Offer a new Method of Component Marking

2019.10.14. Sensor Instruments. In the course of a comprehensive digitisation of industrial production and processes (keyword: Industry 4.0) a new method of marking manufactured components now offers previously undreamed-of possibilities. By way of an individual marking (a random distribution of fluorescent particles on the object surface or in the object matrix) a virtual key can be generated and can be used to save product-relevant data e.g. on the server (or in the cloud). Due to the random distribution of these fluorescent particles this "star code" represents a kind of "digital fingerprint". Already a few particles in the viewing field are sufficient to guarantee safe and robust recognition, with little required memory space per code.

How does it work?

Fluorescent particles are applied to an object (e.g. by spraying or printing) or are embedded in an object (e.g. by using a masterbatch in the plastic matrix). An inline system (LUMI-STAR-INLINE) with activated master mode then records this "star code", which means that the random arrangement of fluorescent particles within the viewing area is saved in a coded manner and is stored e.g. on the server together with the production data. Product tracking, depending on the requirements, can then be performed with an inline system (LUMI-STAR-INLINE) operating in slave mode, or with a hand-held device (LUMI-STAR-MOBILE). The current "star code" is compared with the codes saved on the server (or in the cloud), and if the codes match the relevant data are displayed on the screen of the hand-held device or on the monitor of the inline system.

Where does it work?

Due to the robustness and size of the fluorescent particles (<10µm, inorganic, and withstanding up to 800°C), objects made of metal, wood, paper, textiles (included in the fibre), leather, and plastics can be used as carriers. Depending on the application the particles can be applied to the surface (e.g. by spraying or printing), introduced in the anodising material (e.g. in aluminium parts), or in case of plastics embedded in the matrix with a masterbatch.



The Sensor Instruments inline detectors of the LUMI-STAR series are used for the introduction of product markers in the carrier material.

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