

DISPLAY TAG LF

HERMOS RFID



RFID

Problem definition

In semiconductor factories, production orders are transported and stored in special transport boxes (e.g. FOUP, SMIF, cassettes, boxes). Either cleanroom paper, optically printed cards or RFID transponders are used to mark these production orders and batches. With the help of these marking variants, the objects are identified, information is given to them and the employees in production or logistics can use this information to make assignments and to be able to trace process steps.

Old, analog processes use paper or print media that have to be updated manually, i.e. handwritten by the employees. This costs working time and is extremely prone to errors, because the employees have to take the papers down, enter everything correctly and legibly in the right place, and no matter how often the information is added, it is actually always immediately out of date again.

In an automated semiconductor factory with digital marking and identification processes, the data is held and enriched in databases, updated there and the corresponding link to the production order or batch is realized by means of an RFID transponder (or barcode). In this case, identification is completely automatic and requires no manual effort, but employees can no longer see from the production order itself what it is in detail, what its status is and what the subsequent process steps are (e.g. destination

for transport in order to be able to start the next production process step). This requires either mobile terminals, which are usually never there when they are needed, or ID stations with appropriate displays for visualizing the information, which cannot be installed everywhere because they are very cost-intensive.



Solution

In order to solve the above mentioned problems and to digitalize and automate the old, analog processes, HERMOS offers a completely new RFID DISPLAY TAG LF solution, which is passive - i.e. without its own energy supply like e.g. batteries and therefore absolutely maintenance-free. This offers both a passive LF RFID transponder (134.2 kHz) and a coupled and passive E-Ink display for the optical visualization of the important information. The e-ink display obtains the energy for changing the display content via the coupled LF transponder and this in turn from the antenna field of the RFID system from HERMOS.

Thus, all advantages of passive RFID technology can be used for automatic identification of production orders and batches, as already successfully realized and implemented by HERMOS in the semiconductor industry for many decades. FOUPs or cassettes of any

kind can be automatically identified at the loading point of the production line, at the load port or in the stocker. Manual ID operations will also be feasible as before.

Cleanroom paper or fixed-printed running cards are now a thing of the past. The HERMOS RFID DISPLAY TAG LF solution can be used as a pure digital running card, which can be updated absolutely maintenance-free via RFID and thus requires neither working time for manual updating of the contents nor devours follow-up costs for the procurement of consumables. In the full expansion stage, however, this solution can also be used in combination with the integrated passive LF transponder (134.2 kHz) for automatic identification of the production order at the corresponding reading point in the process chain and has thus exhausted all its advantages - automated identification and digital visualization of the information without its own power supply.

Technical data

Frequency: 134,2 kHz

Display size: 3,7"

Display color: s/w

Power supply:

passive, no batteries, maintenance-free

Memory transponder: 126 Byte EEPROM

- 121 Byte User Memory

- 32 Bit Unique Serial Number

- 8 Bit Selective Address

Dimensions/Fixing:

Customizable for customer/project