



# PRINTESS *RFID*

“print&apply” PRINTER for *smart labels*

- Printess with encoding and testing device of smart labels
- Conforms to EPC Global - Class 1 - Gen 2 standard  
UHF frequencies (European: 866 MHz and U.S.A.: 915 MHz)
- It is also possible to operate with HF at 13.56 MHz
- Double check of data before and after the automatic application of the label
- Automatic rejecting-device for rejecting faulty labels
- Tough construction for use in heavy-duty environments
- All the functions integrated into a single machine



## EIDOS

Labelling & Marking Digital Printers



Smart label with indication of tag (electronic circuit provided with rewritable memory).

## RFID Technology

**RFID** (Radio Frequency IDentification) is used to identify products. An optical reader is used to read barcodes. With **RFID**, radio waves perform the reading by actuating an extremely thin electronic circuit that is inserted inside the adhesive label. This circuit is known as a "tag" and is passive, i.e. it does not have its own independent electric power supply, but is actuated by the energy of the radio waves of the reader. A rewritable data memory is inserted into the tag. The data-storage capacity of these tags is generally greater than that of a barcode. By applying an **RFID** label (so-called "smart label") to a product, it is possible to tag (trace) the product along the entire supply chain from the manufacturer to the end customer. The smart label can contain more data than a barcode and can also be rewritten (updated) several times during the production or logistic process. A growing number of supply chain management companies throughout the world are turning to **RFID** technology to identify different items within the same container, which is something that the "barcode" system cannot do.

**RFID** technology has been in use for many years in different fields but it is only now that it has become practicable for use in smart labels. The labels are applied to the product and are "disposable", i.e. they are not recycled. Owing to technological advances, the cost of a smart label has become acceptable in relation to the cost of the product to which it is applied.

Implementing an **RFID** system involves many parts and levels of a company. EIDOS has specialised in a specific phase: emission of the smart labels with automatic application to the final product. "Emission" is defined as printing the data, encoding the data in the memory and carrying out a total data check. All these functions are integrated into a single machine.

## PRINTESS - RFID

The new generation of **PRINTESS** printers are available with the encoding and control device of the "smart labels", i.e. with the labels provided with radiofrequency tags.

The device is available for models with LINEAR or ROTATING applicators. An important phase of the process is checking the data recorded in the tag memory. The **PRINTESS** printer conducts two checks: one immediately after storing the data in the memory and another when the label has already been applied to the object.

In the event of an error before the application, the label is rejected and another one is printed and encoded. In the event of an error in the label that has already been applied, an external rejection or pallet arrest command is emitted. **PRINTESS** printers are all provided with automatic label applicators and EIDOS has installed the reading/writing antenna directly inside the applicator pad. This design and constructional feature has several advantages:

- It makes it easier to install the antenna in a position near the "tag", thereby using the lowest possible radiofrequency power.
- A sole reader device enables the tag to be identified in two different phases of the application operations.

## RFID operating standards

The **RFID-PRINTESS** printer has been designed for the standard that is the most promising for encoding pallets in supply chains. It is the most recent version of the UHF standard:

### EPC Global Class 1 Gen 2.

European frequency: 866 MHz / U.S.A. frequency: 915 MHz.

The special features of this standard are:

- Great reading distance (up to two or three metres).
- High reading and data-transfer speed.
- Anticollision procedure.
- Drawback: reading may be impaired by fluids and metals.

Another standard that is currently used widely is "**HF**" at 13,56 MHz.

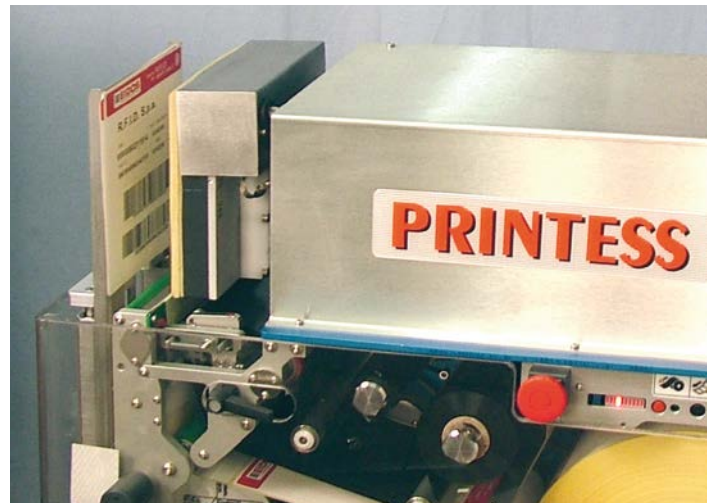
The special features of this standard are:

- Close reading distance (under one metre).
- Reading less disturbed by ambient reflections or by the presence of fluids or metals.

## Applications

The **RFID-PRINTESS** printer has many applications but currently the most promising is labelling pallets, in particular for large chain stores (Metro and Wall-Mart).

Other fields of application for which there should be interesting scope for extending the use of **RFID** are: pharmaceuticals, health, manufacturing, warehouses, logistics and safety in all cases in which the process requires the label to be applied automatically.



"Rejecting" device for rejecting faulty labels



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