

ENCODING

Systems



MagStripe ID-1 Encoders

also for loyalty card applications

MagStripe encoders rely on contact with the card and on precise card handling.

The Rinas MagStripe encoders have either the card transported under the head or have the card held in place and have the head manoeuvred over the card. Generally, the higher speed encoders transport the card through the device and have multiple heads for encoding and verification.

PRINTING

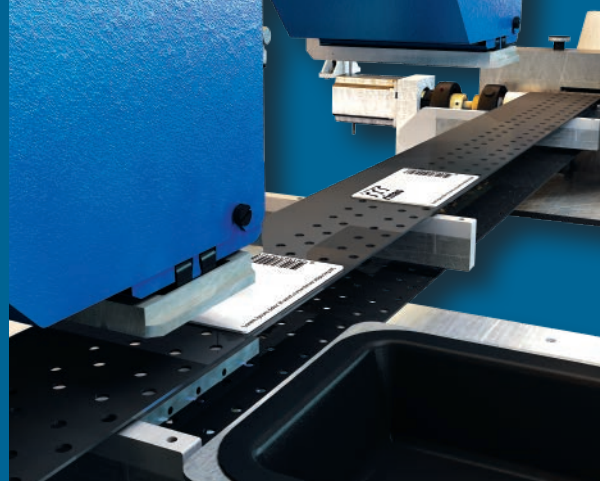
Extensions

Precise Monochrome DoD Printer

for demanding applications

DoD printing is the fastest form of monochrome card printing available within the Rinas portfolio.

There are many factors governing whether any DoD solution is suited to a particular application. Card surface tension, static build-up, card material and transport stability all play a very complicated interwoven role. Even the chemical composition of the inks with their all-important bonding agents and selection of UV curing lamps have to be carefully considered. However, this solution offers the most economical form of printing for large batch runs at higher speeds.



ACCESSORIES

Add-Ons

Card Flipper

for multi-tasked applications

The Rinas electric card flipper rotates a card by 180° before allowing it to continue being transported.

MagStripe and chip cards, in particular, have a preferred manner in which they are fed into an encoding station: e.g. magnetic stripe bottom right; chip facing upwards. Printing on the reverse side can then be challenging. This is just one scenario where the card flipper enters service.



SOFTWARE

And Services

TCP/IP Socket

for exceptional machine control

With the TCP/IP software it is possible to control Rinas devices via nothing more than an Ethernet interface. Thus, the machine can be controlled by the customer without being forced to hand over sensitive or safety relevant data.

The Rinas "RIC" software, which can be installed on any Windows compatible computer, receives client commands and converts them into machine understandable commands. Subsequently the commands are sent via USB and forwarded via a CAN converter to the encoder and its elements. Connected devices are then responsible for issuing events reporting their status to complete the handshaking communication path.



RFID ID-1 Encoders

for LF and HF applications

RFID encoding is contactless and the card simply needs to be positioned in the near vicinity of a reader.

There are a great number of RFID tags on the market and the personalization of them requires more information than is the case for MagStripe personalization. The throughput of single cards is typically slow but can be improved by processing several cards simultaneously.



One of the primary challenges facing any personalization bureau is to determine the exact requirements of a project and to then match these with the skill set and equipment available on the market. The Rinas encoding solutions are modular and can be installed as OEM units in existing personalization lines or used in bespoke solutions that are highly reliable, flexible and deliver an impressive price/performance ratio. Smart Card (chip) applications can also be served with the multi-talented LWR range of Rinas encoders. However, the customer is responsible for the integration of the electronic hardware and system level communication - Rinas provides the contact pins and an interface to the outside world.

Model	MagStripe	RFID		CHIP	Throughput cph	Gift Cards	Card Thickness
	HICO/LOCO	LF	HF				
SEMI-LWR High-speed card encoder for OEM installations	✓				≤6,000	✓	Customer-specific
LWR RFID, MagStripe and Smart Card personalization in one single unit	✓	✓	✓	✓	≤1,500 ≤2,400 ≤2,900 ^{1.)}		0.2 mm to 0.6 mm or 0.6 mm to 1.3 mm
SWR Economical magnetic card encoder	✓				≤6,000	✓	0.2 mm to 0.6 mm or 0.6 mm to 1.3 mm
HWR High-speed magnetic card encoder	✓				≤18,000	✓	0.2 mm to 1.3 mm
SRM ID-1 RFID and Smart Card encoder with optical scanner		✓	✓	✓	≤3,000 ^{2.)}	✓	0.2 mm to 1.3 mm
RFT Multi RFID card encoder for the parallel encoding of RFID cards		✓	✓		≤3,600 ^{3.)}		0.2 mm to 0.6 mm or 0.6 mm to 1.3 mm

1.) Throughput based on MagStripe encoding and verification

2.) Based on writing / verifying 3 sectors of a single Mifare 1k tag with keys

3.) With a tower comprising 6 readers and processing Mifare tags. This unit is really useful if individual tag encoding/verification is typically >5s

Supported RFID transponders: mifare® family, Legic® family, NXP



Thermal Transfer Module

with card reverse functionality

This versatile Rinas printer distinguishes itself from the competition by enabling card reversal (for flipping and printing on the opposite side) as well as advancing the tape by the print length and not the card length.

Thermal transfer printing is an ideal economic solution for projects requiring final print personalization of plastic ID-1 cards. The small footprint of this compact design makes it the ideal choice for integration in personalization stations configured for smaller production runs.

Printing on paper or plastic is always challenging. Ensuring the location of the final print is continually within specification tolerances requires accurate positioning and monitoring of the medium. The Rinas print solutions can all be configured with an optical scanner to ensure the content and location of any artwork is correct.

The Rinas HP Ink Jet solution is very much material dependent when considering plastics, however on paper this unit excels.

Prior to pursuing any technology, sample cards should be made available which, when printed, can then be assessed by the customer's own QA laboratory for suitability.

Model	Medium		Colours			Print Width	Resolution dpi	Throughput cph	Approx. cost per card
	Plastic	Paper	Black	White	Other				
DTM Ink Jet printer unit with card transport	✓ (Conditional)	✓	✓		✓ Paper	12.7 mm ^{1.)}	300 & 600 (v) 60 to 600 (h)	≤8,000/≤2,300 paper/plastic	0,0001 € to 0,001 €
TTD Thermal transfer print module for integration in the CS-LWR	✓		✓	✓	✓	54.0 mm ^{2.)}	300 x 300	≤1,600 20 mm print	≤0.01 € ^{4.)}
DOD Rapid piezoelectric DOD printer with LED UV curing system	✓	✓	✓	✓		54.0 mm ^{3.)}	≤1.200 x 600	≤10,000	0.0001 € to 0.001 € ^{5.)}

1.) Per head - up to 4 heads can be controlled with one controller

2.) One print band per colour covers the full card width - colour mixing has not been tested

3.) Each colour requires a separate head

4.) Based on a print length of 40 mm

5.) Pricing includes 5% loss through purging and is based on a 600 x 600 dpi setting - consumption depends very much on the coverage



Precision LED Scanner

for reliable code and OCR text recognition

Rinas carries two types of scanner in its portfolio - one in the visible light spectrum for high-contrast applications and the other in the IR spectrum for more challenging applications.

This compact scanner, with its built-in LED illumination, is able to detect a variety of one and two dimensional codes and OCR text using state-of-the-art electronics and powerful software algorithms while a card passes by at full production speeds.

Rinas has a number of card separators and stackers at its disposal. The differences between them are sometimes subtle or depend on mechanical restraints and/or operational circumstances. However, all stackers alert when full and all separators can be thickness adjusted and alert when empty.

Model	Capacity		Throughput cph
	Plastic	Paper	
KVW Motorized card separator for all standard card thicknesses	250/500 ^{1.)}		≤4,000 paper/plastic
PVW Mechanical unit for separating cards and tickets	250/500 ^{1.)}	approx. 1000	≤10,000 paper/plastic
KLE Downward stacker	250 ^{1.)}	✓	≤10,000 paper/plastic
KLA Upward stacker	500 ^{1.)}	✓	≤3,500 plastic
KLW Horizontal stacker	500 ^{1.)}	✓	≤10,000 paper/plastic

1.) Based on a card thickness of 0.8 mm



Customization Services

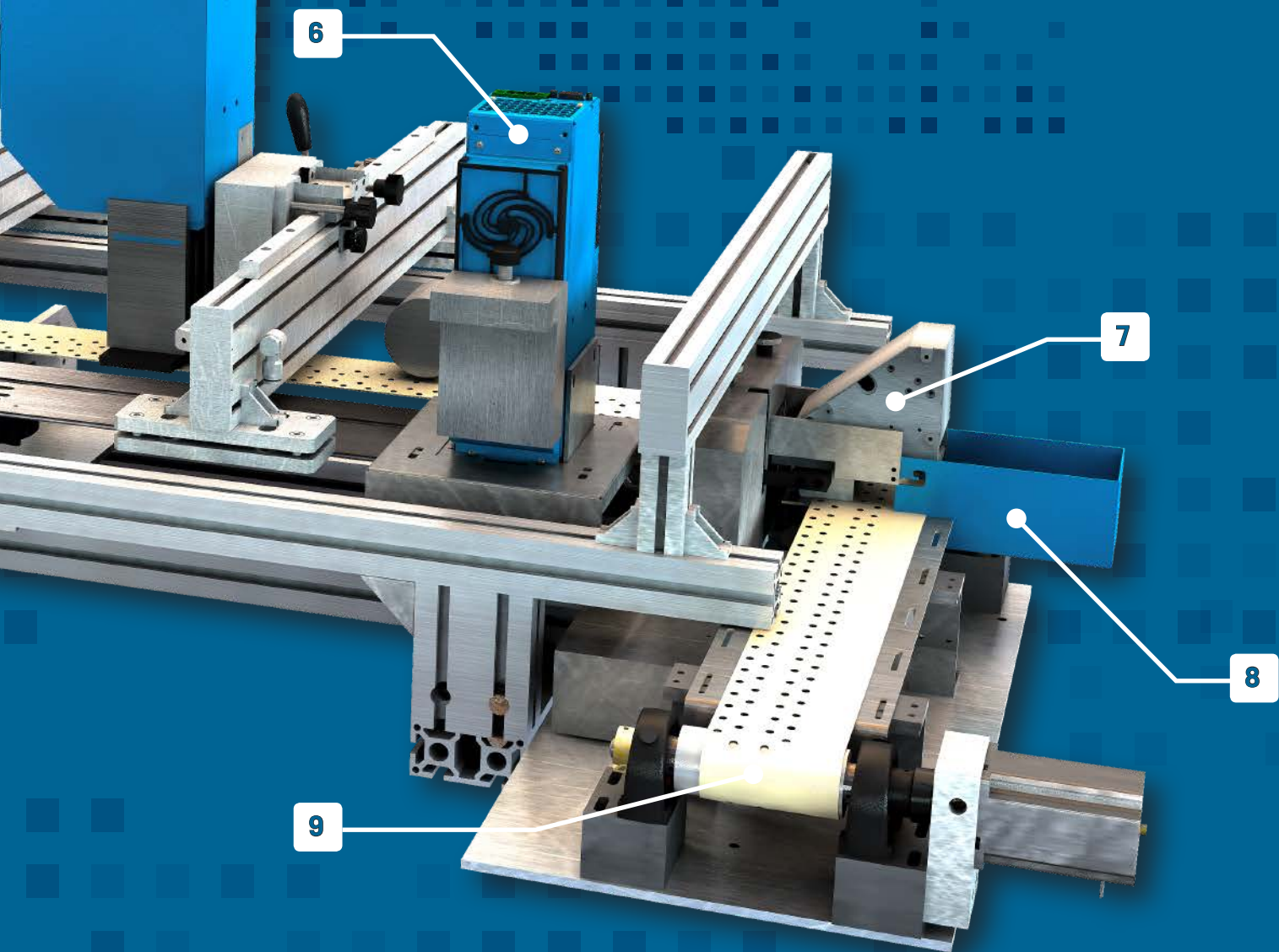
tailored to meet specific requirements

There is no such thing as a standard application. Nearly all projects are unique and therefore require equipment tailored to perform the job in the most efficient manner possible.

The Rinas solutions are modular and can be configured to work together in a multitude of ways following a building block principle. However, for more demanding projects, where off-the-shelf components are simply not available, you can profit from our know-how and have a bespoke solution created following your technician's specifications while adhering to your budgetary limitations.

- 1 Variety of card separators for different capacities of paper/plastic medium with empty recognition
- 2 Choice of encoder module for MagStripe, RFID (up to 2 readers) and/or Smart Card (chip)
- 3 Optical scanner for barcode, OCR text or 2D-code recognition - can be mounted above and/or below the medium
- 4 Printer (DoD) unit with black and/or white inks. The print station could equally well be a thermal transfer unit with a choice of coloured bands
- 5 Vacuum-powered (electrical) drive belt with optical encoder for precision control

Example configuration demonstrating a typical card personalization environment



- 6 UV curing station - only used if the DoD printer option is chosen as the main print unit
- 7 Choice of upward/downward vertical/horizontal card stacker for different capacities of paper/plastic medium with good/bad sorting and full recognition
- 8 Bad card sorting bin for collecting cards/tickets that could not be encoded, printed or read - logging is provided for quality control purposes
- 9 Electrical drive belt carrying good encoded (and printed) medium with a horizontal card stacking configuration



Having a trusting relationship with our customers is our philosophy

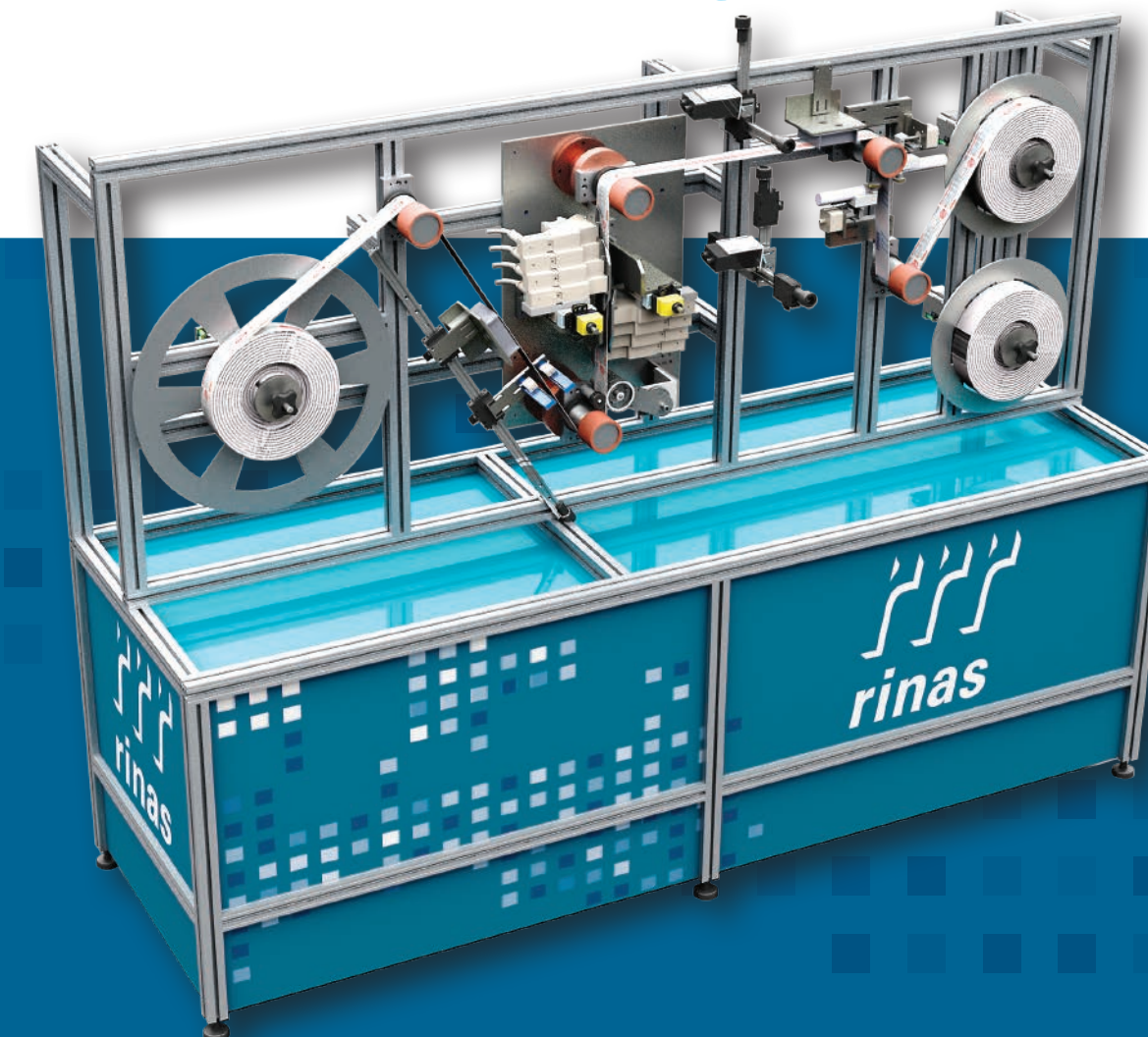
Utilising our extensive know-how, we can incorporate customer wishes and requirements, to the minutest of detail, into our product development processes and then successfully implement them.



Whatever you need

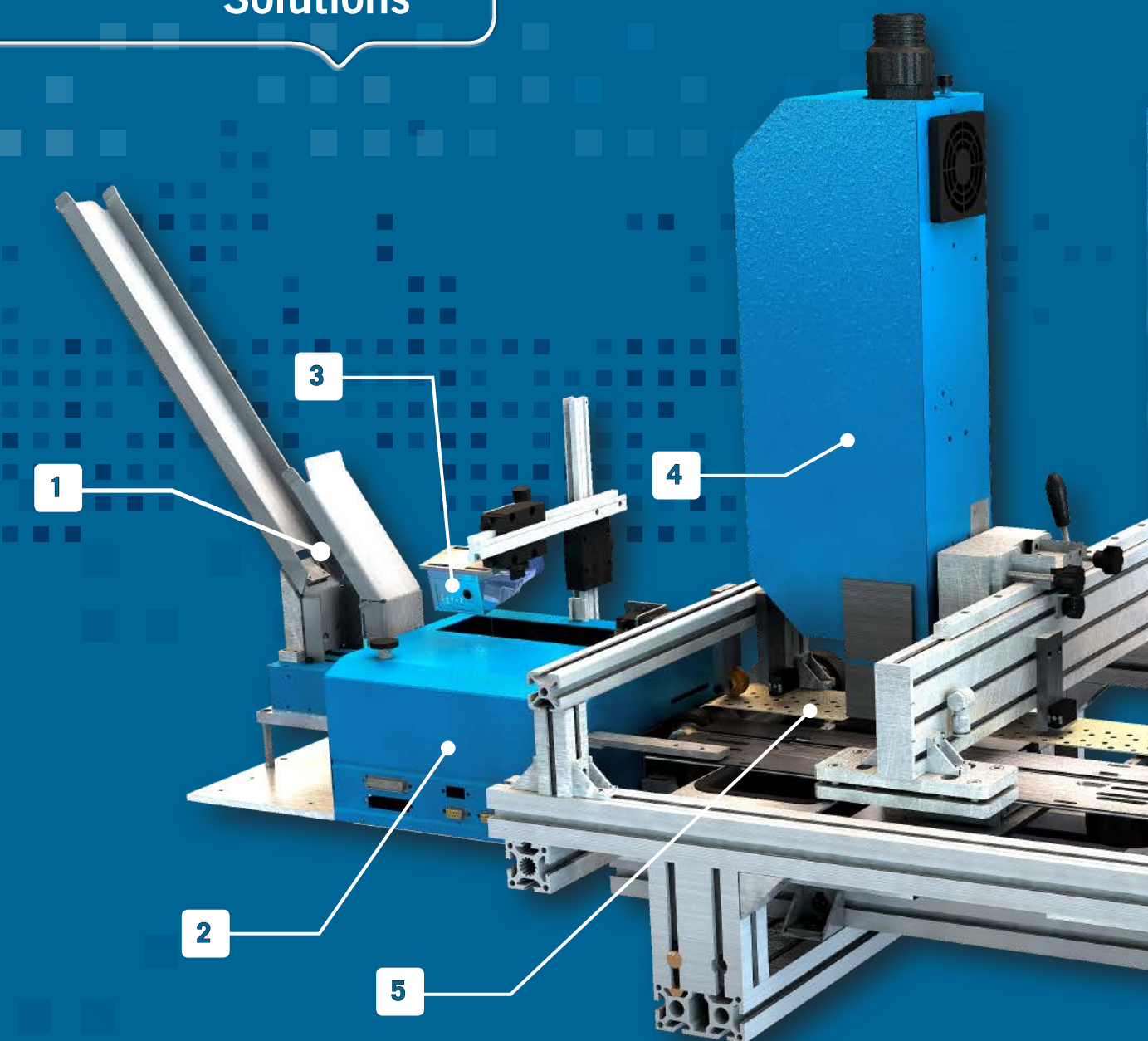
You will hardly find anyone that understands more about card encoding technology than we do. And this extraordinary expertise forms the basis of our second greatest strength: developing customized hardware and software for the production, OEM, quality assurance and service sectors. So whatever you want or need, come and talk to us. We will find the perfect solution for your individual requirements.

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Actively supplying precision engineered OEM and stand-alone card encoding and analysis solutions since 1984 to card personalization industries worldwide.

COMPLETE Solutions



Modular Solutions for Demanding Applications

High-end complete encoding systems, such as the new Rinas CS-DOD, ensure astoundingly reliable, flexible and secure encoding of large production runs in a timely manner. At the same time, intelligent technology of the latest generation ensures minimum maintenance costs and an extraordinarily long operational lifetime.

These Rinas complete solutions profit not just from years of refinement but are constructed using the same precision engineered modules available individually for OEM projects.

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