

SERIES 8900 MOTORIZED MAGNETIC CARD READER/ENCODERS FOR STORED-VALUE CARD SYSTEMS

Description

Series 8900 Readers/Encoders are dual track OEM modules specifically designed for stored-value card systems in which the magnetic card has its current encoded value either decreased or increased at each transaction. The modules are designed for credit card size 7.5-9.6 mil thick polyester or paper cards with high coercivity magnetics. Standard high security and anti-counterfeiting measures implemented include inter-track check code, non-standard encoding, a masked encryption algorithm, unique masked System ID number assigned and registered to each customer, and multiple User ID numbers changeable by the customer. Other security features are available as options.

The Series 8900 consists of two types of modules: Issuer Units and Debit Units. All units are dual track, denoted Track A (ID Track) and Track B (DATA Track). Issuer Units encode both the ID track and the DATA track on new cards. Debit units read both ID and DATA tracks and re-encode the DATA track. Communication with all units is via 7-bit ASCII characters, either TTL-level or RS-232C. All unit operations are under Host software control using a Command & Response routine.

Models

These models have two tracks in non-standard locations for additional security. Each track holds 44 characters of BCD data; 36 characters on Track A and 40 characters on Track B are available to the User. Issuer units are available for either manual or auto-hopper feed of the card and in either thermal print or no-print versions. All debit units are manual feed and are available with a variety of print, mark, and punch capabilities. The specific models are:

Issuer Units:

Model 8903 Manual Feed, Thermal Print.
Model 8904 Manual Feed, No Print.
Model 8913 Auto Hopper Feed, Thermal Print.
Model 8914 Auto Hopper Feed, No Print.
Model 8924 Hi Speed Auto Hopper Feed, No Print.

Debit Units:

Model 8908 Thermal Print.
Model 8909 No Marking.
Model 8917 Thermal Mark.
Model 8929 Rear Capture, Punch Mark.

A Punch Mark model will punch a small circular hole through the card at 11 fixed positions on the lower left face of the card. A Thermal Mark model will place a small square black mark at these same 11 positions on cards with a low-temperature thermal coating on the face. A Thermal Print model will print 26 rows of 26 characters each on the back surface of cards with a special high-temperature thermal coating on back.

Operational Notes

The SYSTEM ID is unique to each customer and registered and masked at the factory. It can neither be read out nor changed in the field. The SYSTEM ID is automatically encoded on cards by Issuer Units. A card must be initially encoded by an Issuer Unit to be accepted by Debit units.

A USER ID of 4 BCD characters is assigned by the customer via software command which loads the USER ID on cards. Debit Units can store up to 4 USER ID numbers and will accept cards encoded with any stored USER ID.

Track A Fixed Data can be read out by either Issuer Units or Debit Units, but can be encoded only by Issuer Units.

Track B Variable Data can be read out and encoded by both Issuer Units and Debit Units.

Debit Units verify the full ID (SYSTEM & USER) before executing read or encode commands.

Specifications

Card Speed: 7.9 IPS for reading writing, and card transporting, 3.9 IPS for punching and thermal marking, 0.5 IPS (13mm/s) for thermal printing, 11.8 IPS for high speed ejecting.

Transaction Time: Nominal transaction time is determined by using above card speeds for each step in the transaction.

Encode Density: 189.5 BPI Nominal.

Track Locations: Non-Standard

Data Format: Non-standard (secured)

Card Thickness: 7.68 – 10 mil polyester (PET) or paper (see S92-206D).

Card Size: 2.125" W by 3.370" L.

Coercivity: 2750 Oersteds.

ROM Capacity: 32 characters, 7-bit ASCII, 20h – 7Fh. Host can write to and read from EEPROM.

Interface: Operation of all units is under Host control via the Serial I/O using an ASCII Command & Response Set. Transmission format is STX + (Command/Response) + ETX + LRC. Control characters (ACK, NAK, ENQ, DEL, EOT) are used to acknowledge commands and order execution. Communication with all units is via 7-bit ASCII characters, TTL-level for non-hopper and RS-232C for hopper modules.

Power:

- Models 8904, 8909, 8917, 8929:
Supply: +12 VDC " 10%, 100 mv P-P ripple max.
Current: 2.8A Max, motor & punch (8929), 2.5A Max, motor & mark (8917), 0.5A Max, motor running (8909, 8918), 0.2A Max, motor off.

Model 8914:
Supply: +24 VDC " 10%, 100 mv P-P ripple max.
Current: 2.0A Max, motor & card hopper feed, 1.0A Max, motor running, 0.1A Max, motor off.
- Models 8903, 8908:
Supply: +24 VDC " 4%, 100 mv P-P ripple max.
Current: 4.0A Max, motor & printing (200 msec), 2.5A Max, marking & motor reverse, 0.5A Max, motor running.
- Model 8913:
Supply: +24 VDC " 3% 100 mv P-P ripple
Current: 6.0A Max, printing (200 Fsec.), 4.0A Max, printing (200 msec), 3.0A Max, card reversing, 0.3A Max, motor off.

Environment: 5° to 45°C

Mechanical MTBF: Transport – 300,000 transactions, Drive Belts – 300,000 transactions, Magnetic Heads – 300,000 transactions, Hopper Pick-Up Roller – 100,000 Card Feeds, Punch Marker – 100,000 times, Thermal Marker – 100,000 times, Printer – 100,000 lines.

Module Size: Nominal 2.17"H x 3.78"W x 5.91"L (Models 8904, 8909, 8929), Nominal 1.16"H x 3.46"W x 6.14"L (Model 8917), Nominal 2.93"H x 4.12"W x 11.09"L (Models 8903, 8908).

Hopper Size: Nominal 4.6"W x 5.3"H front, 11.8"H rear x 14.7"L (Model 8914) x 19.3"L (Models 8913).



I/O Connectors:

Models 8904, 8909, 8917: 8-pin JST. Models 8903, 8908: 14-pin CA. Models 8913, 8914: J1: 4-pin Molex Power; J2: D25 Communications.

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