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VXS-10+RDR-3 functional description

The VXS-10 system is comprised of two circuit boards:

- Controller
- External Reader

The controller contains a micro-controller, which handles all inputs and outputs, including reading a key tag, handling non-volatile memory and opening the lock.

The External Reader contains two sections:

1. Voltage regulator
2. RFID front end

The VXS-10 works off 12V $\pm 2V$. it has an internal 5V voltage regulator for powering the logic section of the circuitry (CPU, memory).

A relay is used as a dry contact to operate an electromechanical lock, which is connected to the unit.

The CPU is a Microchip PIC micro-controller which supervises a few inputs:

- RFID signal – comes from the RFID section.
- DIP switch.
- Four buttons used for programming the system.

A valid key tag code will be compared to up to 300 memory locations in the EEPROM. If key tag code is equal to master key, the VXS-10 will wait to see if key is held in place for 10 seconds. If it is, it enters the programming mode.

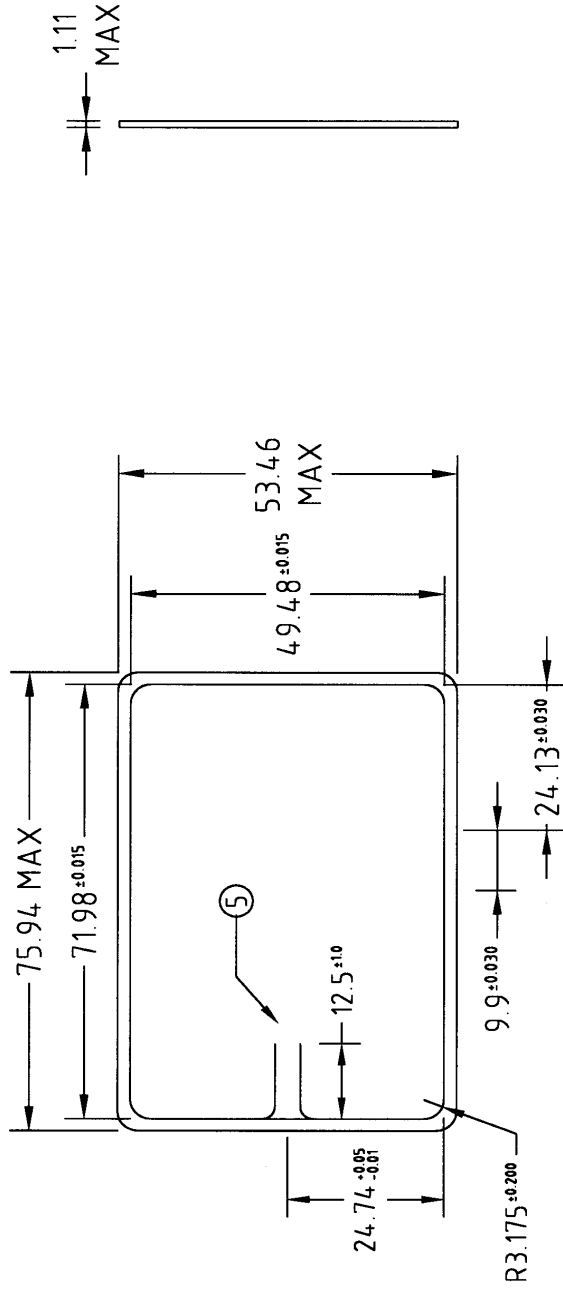
If the key tag is not the master key, the VXS-10 scans the entire memory. If the key is found in memory, the green light is turned on, and the relay is closed to open the lock. If the key is not found, the red light will be turned on.

The RFID front end section is a standard VisAccess design based on the Temic 2270 device.

The 2270 is used for generating a 125KHz carrier on the antenna and filtering the key tag code. The carrier frequency is maintained across the temperature range by using a few accurate capacitors (200V NPO 2% or 5%).

The antenna is a rectangular 54mm x 75mm air coil with a rating of approx. 1.2mH @ 1000Hz.

The field generated by the front end using the antenna provides the CPU with key tag code to a maximum distance of 10cm.



NOTES:

1. Resonance: 800/1,000 KHz.
2. Inductance: 1.2±0.05mHy @ 125KHz.
3. Material: Wire #38 B155, Copper Coated Lacquer. MGT=Magnet Wire
4. Turns: 80 aprox.
5. Strip & Tin: 2.5±0.5mm
6. All dimensions are in mm.
7. DWG/P-N: GTL0001-000

VISIONIC LTD				PRODUCT NAME: RDR-1/2/3/4		SCALE: 1:1		Upd.	REF
PART NAME: RFID ANTENNA FOR RDR-1		MODEL REV. 1		MATERIAL: SEE NOTE 3		0		ECO-9-483	
SIGNATURE		DOC REV. 1		SELF BONDED		1		ECO-9-852	
DATE		CATALOG No. 25900010				2			
DESIGNED		DRAWING No. 25900010				3			
CHECKED		CAD FILE: 25900010.DWG				4			
UPDATED		SHEET # of 1/1				5			
APPROVED									