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### Design & Technologies

-  Read full 56 bits UID, Application & Files content of DesFire EV1 card.
-  Support 3DES & AES encrypted communication between the reader and card.
-  Support on-site Reader Configuration Card to change certain parameters.
-  Number pad use “touching sensor”, the latest technology and individual number backlit when touch.
-  Display Magic can provide customer a full series of choices
-  Display reader can display CSN/UID number or Programmed Card Number or user Name when the user card is present.\* **(Supported Multiple Languages)**
-  Tamper protection
-  Front plate customization and back lit design is available.
-  Design with End User logo is possible.
-  Door Bell function for Number pad reader.
-  Economical Mini Magic can be mullion mount.
-  OLED Display allow user to see the message clearly under direct sunlight.
-  A PIN can be set inside the card to authenticate with the reader so that “Card + PIN” mode can be implemented without relying on the controller.\*

### Friendly Installation

-  “Touch” number pad does not carry any moving parts, which implies more durable.
-  All weather proof design with IP65 certificate.
-  Metal back plate allows the reader install on metal surface and back-to back without affecting the read range.
-  Universal back plate allows the reader be installed on different size of gang box.
-  Non-drop bottom screw made servicing handier.
-  All input and output signals are protected against static charges.
-  Reverse power protection.
-  Stainless steel Security screw is an option
-  All inputs are 12Vdc protected.

**Model Number:** X<sub>1</sub> X<sub>2</sub> N<sub>1</sub> N<sub>2</sub> N<sub>3</sub> – N<sub>4</sub> X<sub>3</sub>

RF Technologies		Reader Appearance and Function	
X <sub>1</sub> X <sub>2</sub>	MD = DesFire Technology	N <sub>1</sub>	3 = Normal Reader ; 5 = Display Reader
		N <sub>2</sub>	2 = Normal Size 8 = Mini Size
		N <sub>3</sub>	2 = Read UID / Card Number 3 = Sector reading (Only Mifare)
		N <sub>4</sub>	3 = Terminal (for Display Reader) 8 = Pigtail
		X <sub>3</sub>	N = No Number pad; K = Number pad

Model	Standard & Mini Reader	Keypad Reader	Display Reader
Functions			

**Configurable Functions**

Re-configure Window	5 seconds (Default) or Half an hour after Power up		
Reader Output Format	CSN/UID 32bits, 34bits, 56bits (backward/forward), file content reading for programmed ID		
Wiegand Plus Width	Different choices to fit with different Controller's requirements		
Keypad Output	N/A	Definable	Definable
Buzzer Control	Reader & Controller control (Default) or Controller control only		
LED/Back lit Control	Define different LED color response base on Green LED		N/A
Display Clock Synchronization.	N/A	N/A	<ul style="list-style-type: none"> <li>H/W reset</li> <li>Via RS485 TimeSyn S/W</li> </ul>

**Technical Specifications**

Typical Read range	2 – 3 cm		
Reader Standard Output	Wiegand (RS232 & RS485 optional)		
Standard Keypad output	N/A	Wiegand with 4 bits burst	Wiegand with 4 bits burst
Display	N/A	N/A	OLED Display
Display Message	N/A	N/A	<ul style="list-style-type: none"> <li>Access Granted, Access Denied, Enter PIN;</li> <li>Time;</li> <li>Card Number</li> </ul>
Wiring Distance	150m (22 AWG with shielded cable)		120m (22 AWG with shielded cable)

**Operating Specification:**

Operating Voltage	10 - 15VDC
Operating Current	150mA (max)
Operating Temperature	-30°C-70°C
Exterior dimension (Mini)	84.05*54.05*16.5mm
Case material	PC+ABS
Standard Color	Black
Operating Humidity	10% - 90%
Weight (Mini)	160g

## **FCC Caution.**

### **§ 15.19 Labelling requirements.**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **§ 15.21 Information to user.**

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### **§ 15.105 Information to the user.**

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.