



# PULSE

## Access Control Series 2014

### Pulse 2038 Contactless Smart Card LCD Keypad Reader

is a user friendly and high security physical Access Control reader, it is water proof design that suitable for different indoor and outdoor installation environment, it made by high quality material and with touch sensor keypad technology to ensure enhanced reliability and long-term duration. LCD can display custom graphics or Company Name, Date, Time and dynamic access grant and access denied message or card number. Reader wiegand output can direct connect to any wiegand door access panel. The reader high security data encryption output which works with Pulse Encryption Gateway ensure the data cannot be snooped by external device, totally solve the wiegand signal problem.

#### KEY FEATURES:

- Waterproof Contactless Technology LCD Keypad Reader
- NXP Mifare Plus 2K/4K bytes card read and write
- Random CSN output, AES Keys authentication (2 x 128 keys per sector)
- 128 x 64 dots Characters LCD graphic display, green back light support
- LCD graphics display custom graphics or company name, date, time and access message or card number, multi-language supported
- LCD display menu allow user to adjust date and time locally
- Internal Real time clock
- RED / Green / Blue or mixed color LED bar, user defined LED ON / OFF time interval, LCD contrast adjustable
- Internal buzzer, user defined buzzer ON / OFF time interval
- Multi card format checking internally, fixed length card number output
- User define wiegand pulse interval to serve different door access panel
- User defined "keep alive" feature
- Touch sensor keypad, overcome the membrane keypad problem
- Reader firmware upgradable
- Standard mode: wiegand output to wiegand door access panel, RS485 to host for LCD reader communication
- Secure mode: high security data encryption output, work with Encryption Gateway avoiding card data being snooped



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## TECHNICAL DATA

<b>Model Number</b>	2038
<b>Card Technology</b>	NXP MIFARE Plus S and MIFARE Plus X (2K / 4K bytes)
<b>ISO standard</b>	ISO14443A
<b>Transmit Frequency</b>	13.56MHz
<b>Key Authentication</b>	AES 128 bits diversify key (2 x 128 bits key per sector)
<b>Card Data Security</b>	192 bits KEY, 3 DES encrypted
<b>MIFARE CSN</b>	Random CSN response
<b>MIFARE Sector Data</b>	Card number maximum 64 bits length, 64 bits custom key, 192 bits 3 DES encrypted
<b>Typical Read Range</b>	ISO Card : 6cm; Keyfob : 4cm  Typical read range achieved in air; Different types of metal will cause some degradation  Use spacers to space product off metal and improve read range if required
<b>Communication</b>	Standard mode : Wiegand + RS485; Wiegand to door access panel, RS485 to PC software  Secure mode : RS485; connect to Encryption Gateway wiegand output to door access panel
<b>Reader firmware</b>	Reader firmware upgradable in off-line mode
<b>Keep alive</b>	User define 1 bytes "I am alive" data in a certain interval (apply for standard and secure mod
<b>Multi Card format</b>	Powerful card format handling, 7 x Card number format and 3 x Facility code per card format checking before output Fixed card number output (1 to 64 bits), parity bits disable / enable
<b>Wiegand output</b>	User define wiegand pulse interval for different door access panel
<b>Reader wires (10 wires)</b>	Power, Ground, Wiegand D0 / ABA Data, Wiegand D1 / ABA Clock, ABA card present, RS485(A), RS485(B), Green LED / ACK, Buzzer, Hold and shield wires
<b>Mounting</b>	Wall Switch Size; designed to mount and cover single gang switch boxes primarily used in the Americas and includes a slotted mounting plate for European and Asian back box spacing
<b>LCD</b>	Green color with backlight graphics display, 128 x 64 (dots),  display area 46mm (W) x 26mm (H), English character display 4 x 16
<b>Visual indicator</b>	LED bar in Red, Green & Blue color, user defined mixed color and ON / OFF time interval (ms)
<b>Audio indicator</b>	Internal buzzer, user defined beep sound ON / OFF time interval (ms)
<b>Color</b>	Dark Gray or White
<b>Keypad</b>	Water proof touch sensor technology, 12 Key, 0 to 9, *, #
<b>Dimension</b>	85 mm x 130 mm x 20 mm
<b>Product weight</b>	220g
<b>Operating Voltage</b>	9-16 VDC, Linear supply recommended
<b>Operating Current</b>	110mA AVG, 130mA PEAK
<b>Operating Temperature</b>	32° to 122° F (0° to 50° C)
<b>Storage Temperature</b>	23° to 140° F (-5° to 60° C)
<b>Operating Humidity</b>	5% to 95% relative humidity non-condensing
<b>Certification</b>	IP65, CE 0700, NCC-CCAJ13LP1150T1, RoHS
<b>Panel Connection</b>	Pigtail
<b>Housing Material</b>	Polycarbonate
<b>Cable Distance</b>	Wiegand interface: 500 feet (150 m), RS485 interface: 4000 feet (1200 m) Recommended cable is ALPHA 1295 (22 AWG) 5 conductor minimum stranded with overall shield or equivalent



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