



# PULSE

## Access Control Series 2014

### Pulse 2028 Contactless Smart Card LCD Display Reader

is an 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 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 Encryption Gateway ensure the data cannot be snooped by external device, totally solve the wiegand signal problem.

#### KEY FEATURES:

- Waterproof Contactless Technology LCD 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
- 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
- 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 snooped



[www.pulsesecu.com](http://www.pulsesecu.com)

Phone: (852) 2151 9018

email: [info@pulsesecu.com](mailto:info@pulsesecu.com)



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## TECHNICAL DATA

Model Number	2028
Card Technology	NXP MIFARE Plus S and MIFARE Plus X (2K / 4K bytes)
ISO standard	ISO14443A
Transmit Frequency	13.56MHz
Key Authentication	AES 128 bits diversify key (2 x 128 bits key per sector)
Card Data Security	192 bits KEY, 3 DES encrypted
MIFARE CSN	Random CSN response
MIFARE Sector Data	Card number maximum 64 bits length, 64 bits custom key, 192 bits 3 DES encrypted
Typical Read Range	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
Communication	Standard mode : Wiegand + RS485; Wiegand to door access panel, RS485 to PC software Secure mode : RS485; Encryption Gateway wiegand output to door access panel
Reader firmware	Reader firmware upgradable in off-line mode
Keep alive	User define 1 bytes "I am alive" data in a certain interval (apply for standard and secure mode)
Multi Card format	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
Wiegand output	User define wiegand pulse interval for different door access panel
Reader wires (10 wires)	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
Mounting	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
LCD	Green color with backlight graphics display, 128 x 64 (dots), display area 46mm (W) x 26mm (H), English character display 4 x 16
Visual indicator	LED bar in Red, Green & Blue color, user defined mixed color and ON / OFF time interval (ms)
Audio indicator	Internal buzzer, user defined beep sound ON / OFF time interval (ms)
Color	Dark Gray or White
Dimension	85 mm x 130 mm x 20 mm
Product weight	220g
Operating Voltage	9-16 VDC, Linear supply recommended
Operating Current	110mA AVG, 130mA PEAK
Operating Temperature	32° to 122° F (0° to 50° C)
Storage Temperature	23° to 140° F (-5° to 60° C)
Operating Humidity	5% to 95% relative humidity non-condensing
Certification	IP65, CE 0700, NCC-CCA13LP1151T3, RoHS
Panel Connection	Pigtail
Housing Material	Polycarbonate
Cable Distance	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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