SOFTWARE HOUSE®

Multi-Technology Readers

Single reader solution for
multiple technologies

Features That Make a Difference:

- Reads more than 10 different types of proximity cards and contactless smart cards[1]
- Uses encryption and custom keys for secure transmission of card data
- Download new functionality or enhancements for a future-proof solution
- GSA certified for FIPS 201 making it ideal for U.S. government applications
- Reads TWIC cards from the U.S. Transportation Worker Identification Credential program
- Choose single-gang or mullion mounting style
- Optional keypad for two-factor verification
- Mount on metal with isolation spacer
- Indoor/outdoor use
- Built-in tamper switch provides secure installation (single-gang, keypad models only)
- Plug-in screw terminals reduce installation time (single-gang, keypad models only)
- Configurable Wiegand output
- ISO compliant
- Lifetime warranty

Software House® Multi-Technology Readers are the industry's most versatile card readers with their ability to read serial numbers from multiple 13.56 MHz smart card technologies, MIFARE® encrypted sectors, TWIC cards, PIV II cards from the U.S. government's Federal Information Processing Standard (FIPS) 201 program, and most of the common 125 KHz proximity cards – all with one reader. This cost-effective solution enables you to transition from proximity to smart cards over time or to utilize both smart cards and proximity cards concurrently in your facility.

Multi-Technology Readers can be updated at any time with flash firmware. This saves significant time and money by allowing you to simply flash new card protocols or formats directly to the reader. These readers are configurable to read encrypted MIFARE sectors using standard or custom MIFARE read keys and can also simultaneously support PIV II smart cards.

Multi-Technology Readers also feature a keypad model which outputs keypad commands and a PIN in 8-bit burst Wiegand data. For higher-security applications, the keypad reader also supports a PIN-on-smart-card feature for secure token exchange. In this scenario, the reader matches the PIN entered on the keypad against a PIN stored on the card and, if successful, transmits only the card data to the controller. The PIN is not transmitted and the overall level of security is increased since a copy of the PIN is not stored anywhere other than on the card.

Important features such as a built-in tamper switch, two-piece connectors and isolation spacers help reduce installation time. Coupled with robust environmental ratings and a lifetime warranty, Software House Multi-Technology Readers are the clear choice for companies looking for a powerful, cost-effective way to use various card technologies.

(1) Reader continuously cycles between 125 KHz and 13.56 MHz and, depending on the frequency cycle when card is presented, the reader will either output the proximity card number or the unencrypted smart card serial number.

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Physical

Dimensions
    Model SWH-4000 . . . . 120 x 45 x 25 mm
                          (4.73 x 1.77 x 0.98 in), mullion
    Model SWH-4100. . . . . 111 x 84 x 28 mm
                          (4.37 x 3.31 x 1.10 in), single-gang
    Model SWH-4200[2] . . . . 111 x 84 x 28 mm
                          (4.37 x 3.31 or 1.10 in), single-gang
                          with keypad
Minimum Wiring . . . . 5 conductors including one LED control line
Cable Recommendations . . 22 AWG [60 m (200 ft) max] or 18 AWG
                          [150 m (500 ft) max], stranded
Wiring Terminations . . . . . . Plug-in screw terminals (single-gang, keypad)
                          One-piece screw terminals (mullion)
Wiring Details . . . . Power and ground
                          Two-wire Wiegand (includes keypad data)
                          External green and red LED control
                          External beeper control
                          Two-wire tamper (single-gang, keypad
                          model only)
Color . . . . Black or light gray (custom colors &
                          patterns available)
Accessories . . . . European surface mount kit
                          Isolation spacer

Environmental

Environment . . . . UL listed for interior or exterior
Operating Temperature. . . . -35° to 67°C (-31° to 151°F)
Humidity Range . . . . 0 to 100%
Index of Protection IP65

Electrical

Power Supply . . . . 8 to 16 VDC 125 mA max @ 12 VDC

Regulatory

Agency Certifications . . . . . FCC Part 15
                          CE
                          UL 294 full outdoor (except mullion)
U.S. GSA Certification . . . . U.S. GSA approved products list for FIPS 201
Compliance. . . . . ISO 14443A
                          ISO 14443B
                          ISO 15693

Operational

Read Range . . . . Up to 102 mm (4 in) depending on
                          technology of card
Read Time . . . . Technology dependent (typically < 300 msec)

Programming and Format Information

Card Technologies Supported
HID proximity
CASI® ProxLite®
Deister proximity
ISO 14443A serial number
MIFARE® serial number
DESFire serial number
ISO 14443B serial number
ISO 15693 serial number
iCLASS® serial number
MIFARE sectors
U.S. FIPS 201 PIV II
U.S. Transportation Worker Identification Credential (TWIC)

Controller Communications
Wiegand
Flashable via RS-485

Configurable Using Program Card
Pass-through[3]
Fixed length[4] (26-bit, 32-bit, 35-bit, 37-bit, 64-bit)
CASI ProxLite 44-bit pass-through
MIFARE sectors
    Select a sector (0-15)
    Customize encryption keys
    Specify data format (number of bits output)
    Enable PIN-on-smart-card functionality
FIPS 201 PIV II and TWIC
    Customize FASC-N Wiegand
    BCD output
        75-bit GSA format
        64-bit
        128-bit
        200-bit
    Customize the HMAC by changing the site key
    Output HMAC
    Output expiration date

Wiring Connector Pinouts

PIN	Description
1	External beeper control
2	Ground
3	Power (8 to 16 VDC)
4	D1 Wiegand
5	D0 Wiegand
6	Reserved for future use
7	External green LED control
8	External red LED control
9	A – RS485 – used for Flash upgrade
10	B – RS485 – used for Flash upgrade
11	Tamper (normally closed; single-gang, keypad model only)
12	Tamper (normally closed; single-gang, keypad model only)

(2) Enabling PIN-on-smart-card functionality will disable 125 KHz Prox read functionality.
(3) Pass-through – the default setting for Software House Multi-Technology Readers that allows the reader to send all the data on the card.
(4) Fixed length – the reader can be configured to output a fixed length by padding or truncating data on the card.

Microsoft GOLD CERTIFIED Partner
ISV/Software Solutions
Networking Infrastructure Solutions

GSA FIPS 201 APPROVED

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