



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 cards¹
- 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.

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-through³

Fixed length⁴ (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.