



## Extended Range Smart Card Reader

### Features That Make a Difference:

- Truly universal smart card reader – reads over five different types of contactless smart cards
- Extended read range, 200–300 mm (8–12 in)
- Perfect for parking applications
- Unique easy-tune adjustment improves performance, reduces impact of nearby metallic objects
- Secure transmission of card data through data encryption and custom keys
- Indoor/outdoor use, IP65 rated
- Future-proof – download reader firmware to support new functionality or enhancements
- Built-in tamper switch provides for secure installation
- Plug-in screw terminals reduce installation time
- FCC, CE, and ISO compliant

With a 200–300 mm (8–12 in) read range, the Software House® Extended Range Smart Card Reader (SWH-2400) is ideal for parking entrances, warehouses, and other access control applications where the convenience of a longer read range is desired.

The Extended Range Smart Card Reader is ISO compliant and provides robust security by reading encrypted sector data from MIFARE® cards, using standard or custom read keys. It also reads card serial numbers from the following smart card technologies: ISO 14443A (including DESFire® and MIFARE), ISO 14443B, and ISO 15693 (including My-D®, SLI-2, iCLASS®), providing an incredibly versatile access control solution.

The Extended Range Smart Card Reader is housed in a rugged, IP65 rated enclosure. Optimum read range is assured through its unique easy-tune feature, which provides a quick method to tune the reader and reduce the impact of nearby metallic objects on the read range.

New functionality or enhancements to the extended range reader can be easily added in the field through its firmware download feature, saving significant time and money by allowing you to simply flash new card protocols or formats directly to the reader.

Coupled with numerous features that provide solid installation and reduce set-up time – a built-in tamper switch, two-piece connectors, easy-tune adjustment, and robust environmental ratings – the Extended Range Smart Card Reader easily provides the convenience of a longer read range to any smart card installation.

### Physical

Dimensions (H x W x D)	.300 x 300 x 30 mm (11.81 x 11.81 x 1.18 in)
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
Wiring Details	.Power and ground Two-wire Wiegand signal (data 0, data 1) External green and red LED control External beeper control Two-wire RS485 for updating firmware
Color	.Light gray

### Electrical

Power Supply	.8 – 30 VDC 300 mA max @ 12 VDC (Independent local power supply required)
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### Environmental

Environment	.Indoor/Outdoor
Operating Temperature	.-35° to 67° C (-31° to 151° F)
Humidity Range	.0 to 95%
Index of Protection	.IP65

### Regulatory

Agency Certifications	.FCC Part 15, CE
Open Standards Compliance	.ISO 14443 A/B, ISO 15693

### Operational

Read Range	.Nominal 200–300 mm (8–12 in) <sup>1</sup> 200 mm (8 in) for ISO 14443 A/B cards 250–300 mm (10–12 in) for ISO 15693 cards
Read Time	.Technology dependent (typically < 300 msec)

### Programming and Format Information

Card Technologies Supported	.MIFARE® encrypted sectors ISO 14443A serial number MIFARE serial number DESFire® serial number ISO 14443B serial number ISO 15693 serial number iCLASS® serial number
Output Configurations Using Program Card	.Pass-through <sup>2</sup> Fixed length <sup>3</sup> (26-bit, 32-bit, 35-bit, 37-bit, 64-bit) MIFARE sectors Select a sector (0-15) Customize encryption keys Specify data format (number of bits output)

<sup>1</sup> Depends on the technology of the card and environmental conditions.

<sup>2</sup> Pass-through - the default setting for Software House Multi-Technology Readers that allows the reader to send all the data on the card.

<sup>3</sup> Fixed length - the reader can be configured to output a fixed length by padding or truncating data on the card.

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