

A&E Specification for the iRox™ Smart Card Reader

Information for Specifiers:

Overview: The iRox™ family of card readers manufactured by Essex Electronics in Carpinteria, CA. include mullion, single and double gang switch plate size form factors. These readers provide unique physical features including a very low profile, ligature resistant design and a ruggedized metal faceplate. More specifically, the faceplate is made of stainless steel which protrudes only 0.19" (.5cm) when properly mounted.

Applications: The rugged, vandal resistant design of the iRox reader delivers superior durability needed in environments such as education, healthcare, manufacturing, and mass transit. Because of the very low profile of the stainless steel faceplate, the iRox reader meets ligature resistant requirements making it especially useful in correctional facilities as well as behavioral health facilities. Environments where rolling carts are used such as equipment carts, hospital gurneys and rolling trash bins also benefit from the nearly flush mounting of the iRox reader by reducing maintenance costs of accidental damage by the carts.

Compatibility: The iRox family of readers can read a wide variety of 13.56Mhz credentials including HID iCLASS®, iCLASS SE®, SEOS® as well as MIFARE, DESFire, FeliCA and CEPAS. Bit format compatibility is provided for any format up to 91 bits in length and the iRox reader can communicate to any access control panel using standard Wiegand. Additional support for 125kHz prox is also offered with the iRox Plus™ (MultiCLASS®) reader. This specification is for the higher security iRox 13.56MHz only reader. If 125kHz support is desired please use the iRox Plus™ specification.

Document Organization: In keeping with the indexing standard provided by the Construction Specifications Institute (CSI) it is recommended the specification text (found on the next page of this document) be inserted in section 28.13.19

Additional Resources: Drawings and Photographs can be found online:

[iRox Data Sheet](#)

[iRox Card Compatibility Table, Installation Instructions and Dimensional Drawings](#)



PLEASE NOTE! This specification provides readers that support 13.56Mhz Smart Cards only. 125Khz credentials are NOT supported. To include 125kHz prox technologies please use the iRox Plus Specification.

28.13.19. ACCESS CONTROL CARD READER

PART 1 GENERAL

1.01 Summary

- A. Bid specification for read only 13.56 Mhz smart card readers.
- B. Related Sections
 - 1. 28 13 33.16 Access Control Interfaces to Access Control Hardware
 - 2. 08 74 13 Card Key Access Control Hardware
 - 3. 26 05 19 Low-Voltage Electrical Power Conductors and Cables

1.02 Manufacturer Requirements

- A. The smart card readers must be made in America. Products manufactured and/or assembled outside of the United States of America will not be accepted.
- B. The manufacturer must have a minimum of 10 years history in electronics manufacturing.

1.03 Submittals

- A. Manufacturer data sheets and manuals for each model to be supplied.
- B. All substitutions and/or alternate products must be pre approved prior to bidding. Substitutions made at the time of bidding will not be considered.

1.04 Warranty

- A. An 18 month warranty against manufacturer defects shall be included

END OF SECTION

PART 2 PRODUCTS

2.01 Manufacturer

Essex Electronics
1130 Mark Avenue
Carpinteria, CA 93013
(805) 684-7601
essex@keyless.com

2.02 Models

- A. IRX-1B iRox™ Narrow Wiegand Wall Reader with iCLASS SE® Black Faceplate
- B. IRX-1S iRox™ Narrow Wiegand Wall Reader with iCLASS SE® Stainless Faceplate
- C. IRX-2B iRox™ U.S. Single Gang Wiegand Wall Reader with iCLASS SE® Black Faceplate
- D. IRX-2S iRox™ U.S. Single Gang Wiegand Wall Reader with iCLASS SE® Stainless Faceplate
- E. IRX-3B iRox™ U.S. Double Gang Wiegand Wall Reader with iCLASS SE® Black Faceplate
- F. IRX-3S iRox™ U.S. Double Gang Wiegand Wall Reader with iCLASS SE® Stainless Faceplate

2.03 FEATURES

Read Only Contactless smart card readers must meet or exceed the following:

- A. Technology: Guaranteed compatibility to read (placeholder) 13.56 MHz contactless access credentials programmed with (placeholder) bit format.
- B. Physical Mounting:
 - 1. All electronics must fit in standard single gang electrical box.
 - 2. The faceplate for the reader shall be made of stainless steel and protrude no more than .125" from the mounting surface.
- C. Environmental: Rated for outdoor use carrying an IP 66 rating, a temperature range of -40°F to +180°F (-40°C to +82°C) with 100% humidity. Readers with lesser ratings will not be accepted.
- D. Power Requirements: The voltage shall be field selectable for either 5VDC or 12VDC, with a current draw not exceeding 300mA peak and shall not exceed 90mA in standby mode.
- E. Reader to Panel Communications:
 - 1. Wiegand or Clock & Data: 5-conductor, shielded #22 AWG (or larger) cable.
 - 2. Bidirectional communication in compliance with V2 of the SIA OSDP (Open Supervised Device Protocol) standard. 4-conductor, shielded #24 AWG (or larger) cable.
- F. Custom Printing: The capability to provide a customized logo and printing on the reader faceplate is required.

END OF SECTION

PART 3 EXECUTION

3.01 INSTALLERS

- A. Contractor personnel shall comply with all applicable state and local licensing requirements.

3.02 PREPARATION

- A. The Contractor shall verify wire runs and wire sizes for location and code compliance for use with the installed equipment.

3.03 INSTALLATION

- A. The Contractor shall follow all Manufacturer-published guidance on proper installation and configuration of the switch sensors.
- B. The Contractor shall test the system in conditions simulating the final installed

END OF SECTION