Inner Range SIFER Smart Card Reader

P/N. 994720: Std / 994720MF: Multi-format
994723: SIFER Reader Mobile Access*

* Mobile Access version supports Inner Range Mobile Access credentials from compatible iOS & Android devices. **For setup & configuration refer to:**
  - **IRSiferMobileCredential_Integration_Manual.pdf (For Integriti)**
  - **Inception Tech Guide - IR Mobile Access.pdf**

Features

- Suitable for narrow door frames or mullions.
- Optical tamper device.
- Configurable RGB LEDs and Beeper.
- Multi-format version reads CSN or UID data from other 13.56MHz formats. *See Data Sheet.*
- Connects to host Module via multi-drop RS485.
- Firmware updates over system wiring in Inner Range systems. **Latest firmware recommended.**

Non-metallic mounting surface recommended.
See 'Mounting Surface' note on page 2.

Optional Spacer for metallic surfaces. Part Number:
- 999037 for SIFER Readers with Assembly Date Code 070820 (7th Aug. 2020) or later. *See 'Barcode Label' on page 2.*
- 999033 for SIFER Readers with Assembly Date Code PRIOR TO 070820.

Compatibility

Product	Minimum Firmware Version		SIFER Readers per Module
	Std / MF	Mobile Access	
ISC / IAC	V4.0	V23.1	16 (IAC ONLY)
ILAM	V2.0	V4.1.0	16
SLAM	V2.0	V4.0.7	4
Integriti Software	V4.0	V23.1	n/a
Inception Controller	V1.0	V6.1.0	8 (SIFER f'ware must be V1.16.0 or later)

Parts List

- Installation manual. (This document)
- Reader body with integrated pigtail cable.
- Mounting plate and Countersunk screw.

Optional Vandal Resistant Cover

- Standard: 999034
- With inbuilt spacer: 999035

Specifications

Operating Temp:	-35°C to +65°C	(-31°F to +149°F)
Ingress Protection:	IP67	
Physical dimensions.	Height: 96 mm	Width: 40 mm
	Depth: 16.25 mm	(26mm with Spacer)
Mounting plate:	91.6 mm (H) x 37.6 mm (W)	

Power supply input: 11-14V DC <500mV ripple.
Current consumption: 65 - 100mA* typical. 150mA max.
*Depends on version & LED configuration.
V+/0V must only be connected to a power-limited circuit.

Maximum Cabling Distance using recommended cables.

Power (V+/0V). @100mA* per Reader.

To 1 Reader with 2-Pair 7/0.2 (24AWG) cable:	100m.
To 1 Reader with 2-Pair 14/0.2 (21AWG) cable:	200m.
To 2 Readers with 3-Pair (2 pairs for +V/0V)	100m.

Data (Data A/Data B/0V).

Access Module to furthest Reader:	1000m.
Total data cabling on one "RDR RS485" Port:	1000m.

Options for long cable runs &/or multiple Readers on the same run.
- Use heavier duty 2-pair cable.
- Use a spare pair or separate heavy duty fig. 8 cable for +V/0V.
- Use a separate local battery-backed power supply.
  See "READER POWER" below for more details.

UL Requirements (North America)

Refer to the Inner Range host LAN Module Installation manual for details of UL regulatory requirements.

FCC (North America)

This device complies with Part 15 of the FCC Rules and Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:
1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Class B product:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses & can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off & on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Warning: Any changes or modifications not expressively approved by Inner Range Pty Ltd could void the user's authority to operate this equipment

ISED Canada

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAN ICES-3 (B)/NMB-3(B)

Extending Cable

See "Preliminary Installation Notes 3 & 4" on page 2.
The pigtail cable can be extended with twisted-pair multistrand data cable. Pair 1 for Data A/B; Pair 2 for V+/0V. Shielded cable provides additional noise immunity. RS485/RS422 data cable, balanced data cable and multistrand UTP cable are recommended. Specific recommendations are provided below. Availability & approval for use may be dependent on your region.

Other types may be used. e.g. Cat. 5e, Cat. 6 or non twisted-pair cable. Refer to the Application Note; 'SIFER Reader Cabling Alternatives' or contact Technical Support for advice.

READER POWER: Remember to allow for voltage drop on V+/0V over longer distances and/or when Readers are wired in a daisy chain (multi-drop) configuration. Supply voltage drop on the cable is approx. 17mV per metre, per Reader, using 7/0.2 (24AWG) cable and assuming each Reader draws 100mA.

OVERALL SHIELD (**2** Pair)

Tycab. DPF4702 or DCK4702	Belden. 9842
Electra. EAS7202P or EAS7302P	Alpha. 6413
Roadworx. RW600224	Garland. MCP-2S

OVERALL SHIELD (**3** Pair)

Belden. 9843	Tycab. DPF6702
General Cable. B2003CS	Garland. MCP-3S
Electra. EAS7203P	Electra. EAS7303P

INDIVIDUALLY SHIELDED PAIRS (2 Pair)

Tycab. DQQ47025	Garland. MCP-2IS
Alpha. 2466C	Belden. 8723

UTP

Garland UTPL5EMTP (4 Pair stranded UTP patch cable)

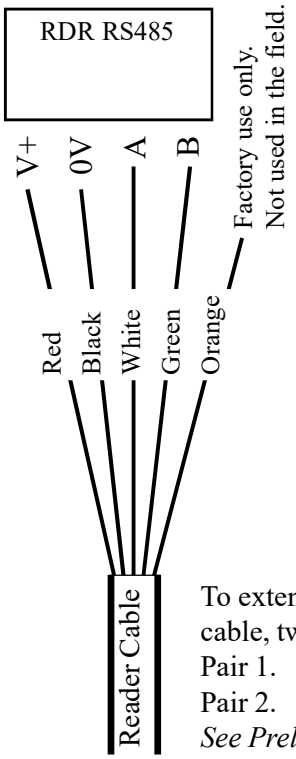
Preliminary Installation Notes

1. MOUNTING SURFACE. SIFER Readers should be installed on non-metallic surfaces. A metallic surface will impair performance & is not recommended. If a metallic mounting surface is unavoidable, the SIFER Reader Spacer (P/N: 999037 or 999033) or another non-metallic spacer/mounting block that provides 8mm or more of separation must be used.
2. IN/OUT READERS. If two SIFER Readers are installed back to back on either side of a Door, mount the Readers at different heights to minimize interference.
3. CABLING. SIFER Readers are wired in a star and/or daisy-chain configuration from the 'RDR RS485' Port (or Inception 'READER' Port), within the limits defined on page 1 under 'Specifications'. The pigtail cable can be extended using twisted pair cable. 2-pair, 7/0.20 (24AWG) twisted pair data cable is recommended. *See "Wiring Diagram" opposite. See "Specifications" and "Extending Cable" on page 1 for cabling distances and recommended cables.* If the cable has more than 2 Pairs, a spare pair may also be connected in parallel to V+ & OV to reduce voltage drop.
4. SHIELDED CABLE. If shielded cable is used:
   a) Do NOT use the shield as the 0V (negative) connection or allow the shield to contact other wiring or metalwork.
   b) Shield is terminated to a protective earth (if available) or 0V, at one end of the cable. i.e. At the host Module.
5. Make a note of the Serial number of each Reader & where it will be installed. *See "Barcode Label" opposite.*
6. LOCATION. If installed outdoors, avoid direct sunlight as this may cause the housing colour to fade over time.

Installing the Reader

1. The Reader should be mounted on a flat, solid surface at an appropriate height. Determine the mounting location for the Reader and ensure that cable access is available.
2. If the mounting plate is attached to the body of the Reader, remove it. Insert a small flat blade screwdriver into one of the two rectangular slots at the bottom rear of the Reader and gently lift the mounting plate out of the Reader body.
3. Using the mounting plate, or the template opposite, mark out, then drill at least 2 holes for mounting screws and a hole for the cable entry at the mounting location, then secure the mounting plate to the surface using appropriate hardware.
4. Join the extending cable (if required) to the Reader pigtail cable using appropriate terminals/joiners. Note the wire colours (as they may be different), then route the cable from the mounting location to the Access Module.
5. Fit off the cable to the Access Module "RDR RS485" terminal as shown above opposite.
6. Test the installation, including tamper detection* (if used), then fit the Reader body to the mounting plate as follows:
   a) Position the tabs in the top of the Reader body into the slots at the top of the mounting plate.
   b) Push the bottom of the Reader body onto the mounting plate until it clicks into place.
   c) Secure the body to the mounting plate at the bottom of the assembly with the countersunk screw provided.
   ***NOTE:** If tamper detection is unreliable due to the mounting surface, adding a white/reflective sticker, or similar, on the surface behind the sensor will assist.

Wiring Diagram



MODULE TERMINAL ID "RDR RS485"	
Module Type	**PCB ID**
Integriti IAC	T7
Integriti ILAM	T1
Integriti SLAM	T1
Inception Cont.	READER

READER CONNECTIONS	
Colour	**Purpose**
Red	+12V supply
Black	0V supply
White	Data A
Green	Data B
Orange	Factory only

To extend the length of the Reader pigtail cable, twisted pair cable is used as follows:
Pair 1. Data A and Data B
Pair 2. V+ and 0V.
See Preliminary Installation Notes 3 & 4.

Barcode Label is on the rear of the Reader & includes:

- Assembly Part No. (top line)
- 6 digit Assembly Date Code (2nd line)
- 6 digit Serial Number (bottom line)

Mounting Plate Template

If replacing a Reader, older versions of the mounting plate are compatible with new Readers and do not need to be replaced.