Regulatory information

ESI Presence Management RFID Reader • United States of America

FCC Part 15

**FCC Notice:** Any change or modification not expressly approved by the manufacturer could void the user’s authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions (1) This device may not cause harmful interference, and (2) This device must accept any interference that may cause undesired operation.

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, and 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 and 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.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC registration**

**FCC ID:** TJ6PR0345.
Introduction

ESI Presence Management is a suite of technologies and features enhancing an organization’s communications mobility, presence of personnel, and management of access control. These features are made available when an ESI system is equipped with one or more special purpose integrated terminals, called ESI Presence Management RFID Readers.\(^2\)

Related documents

You may see references to the following related documents as you go through this Installation Manual. Remember that you can always get the latest versions of these documents, as well as the latest system software, at the ESI Resellers’ Web site: www.esi-estech.com/Resellers.

<table>
<thead>
<tr>
<th>ESI part</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0450-1049</td>
<td>ESI Communications Server Hardware Installation Manual</td>
</tr>
<tr>
<td>0450-1050</td>
<td>ESI Communications Server Programming Manual</td>
</tr>
<tr>
<td>0450-1159</td>
<td>ESI-50L Hardware Installation Manual</td>
</tr>
<tr>
<td>0450-1137</td>
<td>ESI-50L Programming Manual</td>
</tr>
<tr>
<td>0450-1305</td>
<td>IP Server 900 Hardware Installation Manual</td>
</tr>
<tr>
<td>0450-1307</td>
<td>IP Server 900 Programming Manual</td>
</tr>
<tr>
<td>0450-0457</td>
<td>IVX S-Class Installation Manual</td>
</tr>
<tr>
<td>0450-0504</td>
<td>IVX X-Class Installation Manual</td>
</tr>
<tr>
<td>0450-0327</td>
<td>IVX E-Class Installation Manual</td>
</tr>
<tr>
<td>0450-0783</td>
<td>ESI Presence Management User’s Guide</td>
</tr>
<tr>
<td>0450-0439</td>
<td>Network Services Processor (NSP) Installation Manual</td>
</tr>
<tr>
<td>0450-0574</td>
<td>Network Services Processor (NSP) Installation/Programming Instructions</td>
</tr>
<tr>
<td>0450-0669</td>
<td>NSP Installation Made Simple</td>
</tr>
</tbody>
</table>

About the ESI Presence Management RFID Reader

Prior to October 1, 2007, there were two models of the RFID Reader: a weather-resistant “outdoor” model and a model intended only for interior use (#5000-0345). Now, there is only one model — an Inside/Outside RFID Reader (#5000-0360, which is the same part number once used by the earlier “outdoor” model).

The Inside/Outside RFID Reader (as was true for the earlier “outdoor” model) is suitable for installation in environments regardless of whether they are climate-controlled (examples of likely installation areas that aren’t climate-controlled include exterior building entryways and storage rooms). However, if the Inside/Outside RFID Reader is to be installed in an area exposed directly to extreme weather conditions (i.e., heavy rain, sleet, etc.), it must be mounted inside the optional weather-proof enclosure (#5000-0365).

(If you are working with a legacy installation, be aware that the older interior model must be installed in a climate-controlled environment, such as a hallway or lobby.)

Note: All ESI RFID Reader models, legacy and current, are identical in appearance, installation, and operation. Therefore, for the remainder of the document, unless it is specifically stated otherwise, any mention of the RFID Reader refers to any RFID Reader model.

The RFID Reader is typically wall-mounted, and connected to and powered by a digital station port on an IP Server 900, ESI Communications Server\(^3\), IVX X-Class, IVX E-Class Generation II, or IVX S-Class Generation II\(^4\) system.

A programmable CALL key is provided for doorphone operation, and a built-in electromechanical relay is used for door lock control. A backlit two-line LCD display provides the user with status information. A microphone and speaker provide hands free communication. Lastly, an RFID transceiver is incorporated into the device for advanced feature operation (see “Advanced features,” page 3).

The IP RFID Reader is typically wall-mounted, and connected to and powered by a Power over Ethernet (PoE) switch or adapter only, and is supported on only the IP Server 900 and ESI Communications Servers (except for the ESI-50L, which must be upgraded to an ESI-50 to provide support for IP devices).

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1. Radio frequency identification.
2. For the sake of brevity, most references in this document to these items will call them merely RFID Readers.
3. ESI-1000, ESI-600, ESI-200, ESI-100, ESI-50, or ESI-50L.
4. Voice mail version only (i.e., not with Integrated Answering Machine).
Basic features

ESI Presence Management’s basic features include hands-free doorphone (intercom) operation and remote electric door lock operation, which allows a station user to unlock a door from anywhere in the office by pressing a programmable feature key on an ESI desktop phone.

Advanced features

Innovative RFID technology adds advanced features to the basic ESI Presence Management feature set. These features include:

- Presence indication
- Personal Call Routing
- Automatic door lock control
- Time and attendance
- Access door report
- Door-ajar alarm

Each employee (or other authorized person) carries a unique RFID tag in the form of an electronic key (see “Electronic keys,” below). The employee simply waves an electronic key near an ESI Presence Management RFID Reader, which then “reads” the tag number embedded in the electronic key. One or more of the following features can be activated when an electronic key is read:

- In and out status of the employee is automatically indicated on an ESI desktop phone’s programmable station keys.
- Automatically activate or deactivate various station features, such as automatically forwarding calls from the ESI desktop phone to a cell phone.
- Automatically unlock a door (access control).
- Log time and attendance for automatic timesheet and payroll processing.
- Record is stored for “Access” doors opened.

Electronic keys with licensing

Electronic keys come in the form of either a credit-card-sized RFID card or key-ring fob. Each is encoded with a unique RFID tag number. When the electronic key is held within four inches of the ESI Presence Management RFID Reader, the RFID Reader will scan the electronic key’s RFID tag number, provide a confirmation tone and optional prompt, and display an informational (or greeting) message.

The electronic keys used with the RFID Readers are designed specifically for use with ESI Presence Management, and must be obtained through ESI. Licensing is included with the purchase of each electronic key, which is required for RFID feature operation. ESI offers electronic keys in packages of 5, 25, 100, and 500.

Each compatible ESI system supports a maximum number of RFID tags, as shown in the chart, “Maximum tags,” below. If a tag is read on a system that has used all its RFID tags, “LICENSE EXCEEDED” will appear on the Reader, no time and attendance records will be sent, and no phone or access control will be allowed with that tag.

No licensing is required for the ESI Presence Management RFID Readers themselves, or for RFID features.

Maximum tags

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>2,000</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
</tbody>
</table>

Note: See also “System requirements and specifications,” page 4.

1 Available for only the IP Server 900 and ESI Communications Servers (ESI-1000, ESI-600, ESI-200, ESI-100, ESI-50, and ESI-50L).

2 Only on IP version of ESI Presence Management RFID Reader.
System requirements and specifications

The ESI Presence Management **digital** RFID Reader is supported on the following ESI systems and software versions:

<table>
<thead>
<tr>
<th>System</th>
<th>Software version (or greater)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Server 900, ESI-1000, ESI-600, ESI-200, ESI-100, ESI-50, or ESI-50L</td>
<td>[All]</td>
</tr>
<tr>
<td>IVX X-Class</td>
<td>10.7.0</td>
</tr>
<tr>
<td>IVX E-Class Generation II</td>
<td>2.6.0</td>
</tr>
<tr>
<td>IVX S-Class Generation II with voice mail</td>
<td>4.6.0</td>
</tr>
</tbody>
</table>

On the IP Server 900 or IVX S-Class Generation II, the ESI Presence Management digital RFID Reader operates on any digital port.

On other compatible ESI systems, each digital RFID Reader **must** be connected to a digital port on one of the following port cards:

<table>
<thead>
<tr>
<th>Port card</th>
<th>ESI part no.</th>
<th>Port card</th>
<th>ESI part no.</th>
<th>Port card</th>
<th>ESI part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS-612</td>
<td>5000-0418</td>
<td>SL-DLC82</td>
<td>5000-0498</td>
<td>E2-D12</td>
<td>5000-0317</td>
</tr>
<tr>
<td>CS-684</td>
<td>5000-0419</td>
<td>E2-612</td>
<td>5000-0315</td>
<td>E2-DLC12</td>
<td>5000-0348</td>
</tr>
<tr>
<td>CS-D12</td>
<td>5000-0420</td>
<td>E2-684</td>
<td>5000-0316</td>
<td>482</td>
<td>5000-0294</td>
</tr>
<tr>
<td>CS-DLC12</td>
<td>5000-0422</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Important:** ESI Presence Management digital RFID Readers **will NOT** operate on port cards for the older IVX 128, IVX 128 Plus, and IVX E-Class Generation I systems. (They **will** operate on any digital port in an IVX S-Class Generation II system.)

The ESI Presence Management **IP** RFID Reader is supported on the IP Server 900 (any software version), as well as on the following ESI Communications Servers and software versions:

<table>
<thead>
<tr>
<th>System</th>
<th>Software version (or greater)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESI-1000</td>
<td>18.5.3</td>
</tr>
<tr>
<td>ESI-600</td>
<td>16.5.3</td>
</tr>
<tr>
<td>ESI-200</td>
<td>14.5.3</td>
</tr>
<tr>
<td>ESI-100</td>
<td>12.5.3</td>
</tr>
<tr>
<td>ESI-50</td>
<td>11.5.3</td>
</tr>
<tr>
<td>ESI-50L</td>
<td>(n/a)</td>
</tr>
</tbody>
</table>

Regardless of which type (digital or IP) of RFID Readers may be in use, the optional time and attendance messaging interface requires the presence of an NSP. The following table indicates NSP availability on ESI Presence Management-compatible systems:

<table>
<thead>
<tr>
<th>ESI system</th>
<th>Models shipped from ESI . . .</th>
<th>NSP availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Server 900, ESI-1000, ESI-600, ESI-200, ESI-100, ESI-50, or ESI-50L</td>
<td>[All]</td>
<td>Built-in</td>
</tr>
<tr>
<td>IVX S-Class Generation II (voice mail model only)</td>
<td>July 1, 2005 (or later)</td>
<td>Available at purchase</td>
</tr>
<tr>
<td>IVX X-Class</td>
<td>Before July 1, 2005</td>
<td>Optional</td>
</tr>
<tr>
<td>IVX E-Class Generation II</td>
<td>[All]</td>
<td>Built-in</td>
</tr>
<tr>
<td>IVX E-Class Generation II</td>
<td>Before February 17, 2006</td>
<td>Optional</td>
</tr>
</tbody>
</table>

Regardless of which type (digital or IP) of RFID Readers may be in use, fob events may be stored on the IP Server 900 or the optional Applications Services Card (ASC) on an ESI Communications Server (except for the ESI-50L, which must be upgraded to an ESI-50 to accept an ASC).

**Capacities**

Each ESI Presence Management digital RFID Reader requires a single digital port. The number of digital RFID Readers that can be connected to the system is limited only by the number of available digital ports — except on IVX S-Class Generation II, where the limit is two RFID Readers per port card.

Each ESI Presence Management IP RFID Reader requires a single local or remote licensed IP port. The number of IP RFID Readers that can be connected to the system is limited only by the number of available IP ports and licenses.

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1. ESI Presence Management is not supported on the discontinued IVX S-Class Generation II with Integrated Answering Machine.
2. For the ESI-50 only.
3. For **only** the ESI-50 and IVX S-Class (Generations I–II) [as well as the ESI C-Plus systems, which do not support ESI Presence Management].
Specifications, ESI Presence Management RFID Reader

**Dimensions:** 5.5” H x 3.6” W x 1.3” D.

**Power:** N/A (powered directly from digital station port on ESI system).

<table>
<thead>
<tr>
<th>Device</th>
<th>Power source</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESI Presence Management (digital) RFID Reader</td>
<td>Digital station port on ESI system</td>
</tr>
<tr>
<td>ESI Presence Management IP RFID Reader</td>
<td>Power over Ethernet (PoE) switch or adaptor</td>
</tr>
</tbody>
</table>

**Environmental:**

<table>
<thead>
<tr>
<th>Device</th>
<th>Operating temperature</th>
<th>Relative humidity (without condensation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESI Presence Management RFID Reader, Inside/Outside</td>
<td>-4°F–158°F (-20°C–70°C)</td>
<td>5–95%</td>
</tr>
<tr>
<td>ESI Presence Management RFID Reader, interior²</td>
<td>32°F–158°F (0°C–70°C)</td>
<td>5–95%</td>
</tr>
<tr>
<td>Electronic key (key fob or card)</td>
<td>32°F–158°F (0°C–70°C)</td>
<td>5–95%</td>
</tr>
</tbody>
</table>

**Door lock control relay:**

- **Maximum switching power:** 60 W (125 VA)
- **Maximum switching voltage:** 24 VDC ± 10%
- **Maximum switching current:** 2 A
- **Maximum carrying current:** 2 A

**Tamper switch¹:**

- **Maximum switching power:** 60 W (125 VA)
- **Maximum switching voltage:** 24 VDC ± 10%
- **Maximum switching current:** 2 A
- **Maximum carrying current:** 2 A

¹ Discontinued October 1, 2007. See “About the ESI Presence Management RFID Reader” on page 2.
² Revision B units only.
About door lock control

There are several types of electric and electromagnetic door locks. The installation of some of these types of locks is regulated in many municipalities, specifically to meet building and fire codes. This section briefly describes the more common types of electric door locks and their associated requirements.

Electric strikes

Electric strikes are installed in a door frame where the strike plate is usually mounted. It includes a plate called the keeper or gate which is electrically released to swing out and thereby allows the latch to move through the space the keeper has vacated. There are several different types of electric strikes. Most electric strikes require 12 or 24 volts DC, and they may be fail-safe or fail-secure. A fail-safe electric strike needs power to remain locked, and is not commonly used. The most common type of electric strike is fail-secure. A fail-secure electric strike stays locked even without power from the outside coming in. To exit, a door knob or lever on the entry lockset is manually operated. Since the electric strike is not needed for this, it allows for safe exit. To provide an audible indication that the door is unlocked, DC-powered electric strikes will make a slight click when operated. It should be noted that the ESI Presence Management RFID Reader emits a confirmation tone when the door control relay is operated; therefore ESI recommends that a DC-powered electric strike be used with the RFID Reader for door access control.

Electromagnetic locks

Electromagnetic locks (magnalocks) are designed to secure any type of door or gate that closes against a fixed stop. All magnetic locks will work only with DC current, usually 12 to 24 volts. All electromagnetic locks are fail-safe. This means that they need a constant source of current to remain locked: if power is removed, the lock will open.

All electromagnetic locks are silent, even when powered and locked. The lock consists of an electromagnet which mounts on the door frame and a strike plate which mounts on the moving door or gate. The strike plate is mounted in such a way that, when the door closes, it automatically self-aligns with the magnet. Magnetic force then takes over, strongly securing the door. Release is achieved by switching off power to the magnet. This type of lock secures the door from both entering and exiting, and there is no alternate method of unlocking the door.

Important: Electromagnetic locks can be dangerous with respect to fire and smoke safety if not installed properly. Because of this, installation of this type of lock must be done by a licensed professional in most, if not all, areas. Before planning an installation it's very important to always check with the Local Authority Having Jurisdiction.

Electric deadbolts

Electric deadbolts come in several different styles, and as with electric strikes, they come in fail-safe and fail-secure configurations. The deadbolt is operated via a solenoid in the lock housing. Some models have a manual cylinder that allows exit without operating the solenoid. However, because electric deadbolts are installed separate from a standard entry lockset, they can be as dangerous as electromagnetic locks if not installed properly. Because of this, installation of this type of lock must be done by a licensed professional in most if not all areas.

1 A buzzing sound, instead, indicates an AC-powered electric strike; ESI Presence Management doesn't work with AC-powered strikes.
Stand-alone battery locks (SABLs)

Stand-alone battery locks (SABLs) control access through electrically locked doors. The SABL is a combined digital keypad and cylindrical lock similar to an electric deadbolt. Since this type of lock is mounted on the door itself, and is “self-contained,” it cannot be connected to the RFID Reader.

Recommendations

Because of code requirements in most municipalities, **ESI does not recommend** that a non-certified and/or unlicensed person attempt to connect certain types of electric door locks to an ESI Presence Management RFID Reader. Below is a table listing the types of door locks and recommendations.

<table>
<thead>
<tr>
<th>Lock type</th>
<th>Fire alarm override(^1) required?</th>
<th>Regulated(^2)</th>
<th>ESI recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door strike (fail-safe)</td>
<td>No</td>
<td>Possible</td>
<td>Recommended</td>
</tr>
<tr>
<td>Door strike (fail-secure)</td>
<td>No</td>
<td>Possible</td>
<td>Recommended</td>
</tr>
<tr>
<td>Electromagnetic lock</td>
<td>Yes</td>
<td>Yes</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Electric dead bolt</td>
<td>N/A</td>
<td>Yes</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Stand-alone battery lock</td>
<td>N/A</td>
<td>Possible</td>
<td>Not recommended</td>
</tr>
</tbody>
</table>

**ESI disclaimer**

**DISCLAIMER:** ESI Takes no responsibility as to the legality of controlling the operation of an electric door lock using the ESI Presence Management RFID Reader in all jurisdictions. It is the responsibility of the installing company and the end-user to determine and follow the applicable state and local laws and regulations regarding the proper mounting, connection and use of the ESI Presence Management RFID Reader for door lock control.

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\(^1\) In many jurisdictions, a fire alarm or automatic sprinkler system must be able to unlock an electromagnetic door lock.

\(^2\) There may be additional regulatory requirements if the lockset is other than a “standard” entry set (i.e. deadbolt, keyed both sides, etc.)
Feature summary

Basic features

- **Doorphone** — A call can be initiated to a pre-assigned destination (an extension, department, mailbox, auto-attendant branch ID, or Esi-Link location) by pressing the **CALL** button on the ESI Presence Management RFID Reader.

- **Manual door lock control** (remote door unlock) — Where an RFID Reader is installed, a call can be made to a station, department, mailbox, auto-attendant branch ID, or Esi-Link location by pressing the **CALL** button. If a user answers that call, the user can then use the remote door unlock feature key to unlock the associated door. The user remains connected to the doorphone when using the remote door lock control feature. The **CALL** button destination can be different for day and night modes.

- **Tamper switch** — Each ESI Presence Management RFID Reader (regardless of model) contains a 45° tilt-detecting tamper switch. When the tamper switch is connected to a security system, if the RFID Reader is removed from the wall, the tamper switch will close/open contacts that will generate an alarm to the security company.

- **Door-ajar alarm** — Some doors will generate an alarm if the door has been left open for too long. If this alarm is generated by the door, a message will appear in the display of the phones that ring when the **CALL** button is pressed.

  **Important:** Only ESI Feature Phones can be used to remotely unlock the door.

  The code for the remote door unlock feature key is **581**.

RFID features

- **Access control** — Electronic keys are allowed, or restricted from, activation of electric door strike locks via programming. Each electronic key that's allowed door control is assigned the extension number(s) (or "ALL" for all Readers) of the RFID Readers for which it's allowed to control door locks.

- **Access schedules** — Each electronic key may be allowed to open doors at any time, or allowed and restricted at certain times of day and day of week, by assigning the tag number to any one of seven programmable schedules.

- **Authentication confirmation** — When an RFID Reader scans an electronic key, and the system validates or rejects the electronic key for door control, the RFID Reader will display a message and play a tone or optional greeting. Valid electronic keys receive the message **WELCOME** or **GOODBYE**. Rejected electronic keys receive the message **ACCESS DENIED**.

- **DSS key presence indication** — DSS keys assigned with an electronic key user’s extension number can provide a unique indication when that person is out of the office.

- **Personal Call Routing** — Electronic key users that have phone extensions can have the option of pre-assigning features that are applied automatically when tagging in or out. One or more of the following features can be set:
  - Personal greeting selection (greeting 1, 2, or 3).
  - Call-forward all calls (to a voice mailbox, extension, department, Esi-Link location, or external number) or send all calls directly to voice mail.
  - Voice mail message delivery/notification on/off.

  Electronic key users associated with guest mailboxes can only select a personal greeting.

- **Quiet time** — Each electronic key user can schedule a “quiet time” for each day of the week, during which the system automatically turns off message notification and/or call forwarding (if assigned). For example, calls that would have forwarded are, instead, directed to voice mail.

- **Time and attendance management** — Provided by the optional **WaspTime** software package. Includes time/attendance tracking, reporting, and integration with popular payroll and financial packages.

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1 Only on IP version of ESI Presence Management RFID Reader.
2 Not sold by ESI; available for direct purchase from the manufacturer, Wasp Barcode Technologies (www.waspbarcode.com).
3 For more information, consult the ESI Presence Management Product Overview (ESI part # 0450-0794).
Installing the RFID Reader

Tools needed

- T-10 Torx® screwdriver
- \( \frac{1}{8} \)" flat-blade screwdriver
- #2 Phillips® screwdriver

Mounting and installing the digital RFID Reader

1. Remove the back case cover of the RFID Reader by removing the Torx screw from the bottom of the RFID Reader and pulling the case apart from the bottom (Fig. 1).

2. Place the back case cover on the wall where you plan to mount the RFID Reader, and mark on the wall the center of each of the two mounting holes.\(^1\)

3. If mounting on wallboard or masonry, drill \( \frac{3}{8} \) -inch holes at the marks made in step 2.
   If mounting on wood, drill \( \frac{1}{8} \)-inch holes.

4. Mount the back case on the wall, using the provided screws and plastic wall anchors. Note that the large rectangular opening in the back case is used to run the cable through to connect to the terminal strip on the RFID Reader (Fig. 2).

5. Connect the digital station cable pair to screw terminals 1 and 2 (Fig. 3). Again, note that the wires connect through the back of the terminal strip.

Notes: The RFID Reader is not polarity-sensitive, so either wire can be connected to either terminal.
The large rectangular opening in the back case is used to run the cable through to connect to the terminal strip on the RFID Reader (Fig. 1).

\(^1\) The RFID Reader can also be mounted on a standard duplex electrical box, if preferred.

(Continued)
6. If connecting an electric door lock: before continuing, you must check the serial number of the RFID Reader. You'll find the serial number on a label on the inside-top edge of the RFID Reader's case.

(a.) If the RFID Reader's serial number begins with 00345:
Connect the door lock wires to terminal 5 and either terminal 4 or terminal 6 (Fig. 3a), depending on the type of electric door lock. Terminal 4 is the normally open ("N.O.") contact of the relay, terminal 5 is common ("COM"), and terminal 6 is the normally closed ("N.C.") contact.¹

(b.) If the RFID Reader's serial number begins with 00360: Connect the door lock wires to terminals 5 and 6 (Fig. 3b). If normally open contacts are used to control the door lock, the jumper on the terminal block (Fig. 4) labeled J1 must be on pins 2 and 3 (standard setting). If normally closed contacts are used to control the door lock, the jumper must be on pins 1 and 2.

| Important: | An RFID Reader with a serial number that begins with 00345 won’t have a J1 terminal block. An RFID Reader with a serial number that begins with 00360 also has a normally closed tamper detection switch that can be connected to a security alarm system; these connections are located on terminals 3 and 4 ("TS-A" and "TS-B," Fig. 3b). For detailed instructions about connecting to electric door strike locks, see “Manual door lock control,” page 29. |

7. Attach the RFID Reader to the case back, by hooking the top of the reader to the top of the case back and swinging it down (Fig. 1, page 9).

8. Replace the retaining Torx screw.

9. Cross-connect the cable pair to an unused digital station port on the ESI system, and test.

1 Terminal 3 is unused.
Installing the weather-resistant enclosure

The weather-resistant enclosure is a hinged polycarbonate box with a “smoked” transparent cover. Inside it is a smaller junction box to which the RFID Reader is mounted. A cable-entry hole is located in the back of the enclosure.

1. Mount the weather-resistant enclosure, with the hinges at the top (Fig. 5).
2. Pull the cable through the entry hole of the enclosure and junction box.
3. Remove the back case cover of the RFID Reader by removing the retaining screw at the bottom of the Reader and pulling apart the two case pieces (Fig. 1, page 9).
4. Pull the cable through the rectangular opening of the case back (Fig. 2, page 9).
5. Mount the back of the RFID Reader to the junction box inside the enclosure.

Mounting the IP RFID Reader

Important: The IP RFID Reader can be installed only indoors.

The ESI Presence Management IP RFID Reader includes the following items:
• One six-pin interface cable — Used to connect to a door strike, door-ajar alarm, or tamper switch.
• One Ethernet® cable — Connects to CAT-5 jack (below) to allow power over Ethernet (PoE) connection.
• Two screws with rubber washers and wall anchors.
• One CAT-5 jack.

1. Remove the back case cover of the RFID Reader by removing the retaining Torx screw at the bottom of the RFID Reader and pulling the case apart from the bottom (Fig. 6).
2. Place the back case cover on the wall where you plan to mount the RFID Reader, and mark on the wall the center of each of the two mounting holes.¹
3. If mounting on wallboard or masonry, drill 1/4-inch holes at the marks made in step 2. If mounting on wood, drill 1/8-inch holes.
4. Mount the back case on the wall, using the provided screws and plastic wall anchors. Note that the large rectangular opening in the back case is used to run the cable through to connect to the terminal strip on the RFID Reader.

Note: The large rectangular opening in the back case is used to run the cable through to connect to the terminal strip on the RFID Reader (Fig. 6).

¹ The ESI Presence Management RFID Reader can also be mounted on a standard duplex electrical box, if preferred.
5. Connect the six-pin interface cable to the J9 connector on the IP RFID Reader circuit board (Fig. 7). The white wire goes in Pin 1 of J9. Again, note that the wires connect through the back of the terminal strip. These wires are not polarity-sensitive.

- **White wires** — Connect to the tamper switch already provided in the RFID Reader. To activate the tamper switch, simply close off this circuit by connecting together both white wires.
- **Blue wires** — Used for a door-ajar alarm.
- **Orange wires** — Used for a door strike plate.

6. Connect the eight-pin Ethernet cable to the J6 connector on the IP RFID Reader circuit board (Fig. 7). The solid green wire goes in Pin 1 of J6.

7. Attach the IP RFID Reader to the case back, by hooking the Reader’s top to the top of the case back and swinging it down (Fig. 6).

8. Replace the retaining Torx screw.

9. After pulling the Ethernet cable through the wall, connect the four pairs of wires to the corresponding location of the CAT-5 jack.

10. Plug an Ethernet cable into the ESI Presence Management IP RFID Reader’s Ethernet jack and the other end of the Ethernet cable into a LAN jack. (If a PoE switch isn’t in use on the LAN, a PoE adapter must be used to power the IP RFID Reader.)

Programming

Note: You can use *Esi-Access* v. 2.11.0 (or higher) to program *ESI IVX* systems that support ESI Presence Management. (For the IP Server 900 or ESI Communications Servers, any version of *ESI System Programmer* is compatible. However, programming for the IP RFID Reader requires *ESI System Programmer* 1.2.10.1 [or higher].)

Overview

RFID Readers and feature parameters are assigned using the following programming functions:

- **Function 157** — Door unlock timer.
- **Function 169** — System features: Presence indication DSS lamp indication.
- **Function 31** — Station programming: RFID Reader assignment.
- **Function 37** — RFID programming:
  - **Function 371** — Access control schedule programming.
  - **Function 372** — RFID tag assignment.
  - **Function 373** — View RFID tag number.
  - **Function 374** — ESI Presence Management parameters.
- **Function 81** — View licensing: RFID tag licenses.

Depending on the customer’s application, not all functions necessarily need to be programmed. Later on in this document, we’ll go over some common applications of ESI Presence Management features and how to install and program to support these applications.

Note: If using any RFID features — *i.e.*, if using ESI Presence Management for anything more than its doorphone capabilities — you should save time by first scanning the electronic keys at any RFID Reader connected to the system. The system will store the electronic keys’ tag numbers automatically, and you can use the scroll keys to select the tag numbers to be assigned.

Programming functions

**Function 157 — Door unlock timer**

This parameter is used to adjust the number of seconds that a door-unlock relay will remain on after a remote door unlock key is pressed or an authorized electronic key is read.

```
DOOR UNLOCK TIME
> 4 SECONDS
```

Enter the number of seconds that a door-unlock relay should remain on after a remote door unlock key is pressed or an authorized RFID tag is read. Press # to confirm.

**Range:** 2–60 seconds. **Default:** 4 seconds.
**Function 169 — System features**

When an electronic key user has an extension associated to the tag number (assigned in Function 372), programmable feature keys assigned with that extension number (DSS keys) will light amber when that user has exited the premises. This parameter allows you to set apart the type of DSS key lamp indication for DND and “Exit” status.

<table>
<thead>
<tr>
<th>IN/OUT DSS LAMP</th>
<th>&gt;OUT OFFICE WINK</th>
</tr>
</thead>
</table>

Use the scroll keys to select the type of DSS key lamp indication for DND and “Exit” status. Press # to confirm.

When a station is in “Exit” mode or the station is set to DND, other stations that have a DSS key of that station will have that key light amber.

- If set to **BOTH SOLID**, a DSS key will be lit steady amber for both DND and exit indications.
- **DND WINK** will have a slow blink rate when in DND and lit solid for off-premise.
- **OUT OFFICE WINK** (the default) will have a slow blink rate when off-premise and DND will be lit solid.

**Note:** When the electronic key user who IS NOT a member of an operator department exits the building (“fobs out” or “cards out”), his/her associated ESI desktop phone will go into off-premises standby mode, which causes the phone’s programmable feature keys to unlight — i.e., while the phone is in this mode, the keys won’t light. (The **VOICE MAIL**, **HOLD**, and **DND** keys will still light up as may be applicable.) When the electronic key user enters the building (“fobs in” or “cards in”), the appearance of the lights on the user’s desktop phone’s programmable feature keys’ will update. To reiterate: **Only** the key lights of the specific keyholder will unlight — **not** those of all the phones on the system.

**Function 31 — Station programming: RFID Reader assignment**

**Digital RFID Reader assignment**

**Important:** On an IP Server 900, ESI Communications Server, IVX X-Class system, or IVX E-Class Generation II system (but not IVX S-Class Generation II system), before the RFID Reader can be programmed, it must first be connected to a digital station port [on all but the IP Server 900, on a “CS”- or “E2”-type port card] for proper operation. See “System requirements and specifications,” page 4.

1. Enter the extension number of the RFID Reader to be programmed and press # to continue.

    | STATION PROG |
    | EXT: 123 |

2. Enter the name of the RFID Reader. The name can be up to 10 characters long. Suggested names include the name of the entrance (“MAIN LOBBY”) or room (“STORAGE”) near which the RFID Reader is mounted. Press # to continue.

    | X123 READER NAME |
    | NAME: |

**Notes:** Refer to the ESI system’s Installation Manual for instructions on entering alphanumeric characters. If using an ESI system on which tenanting either isn’t enabled or isn’t available, skip to step 4.

(Continued)
3. Enter the tenant and press # to continue.1

X123 READER NAME
TENANT: 1

4. Select the RFID Reader operation mode:
   • Entrance/exit — Used for entry doors into buildings or suites. Supports presence status, phone control, and attendance records. (Default.)
   • Access only — Used for doors to secure areas. Doesn’t provide in and out status, Personal Call Routing, or attendance records.

Both modes support remote door unlocking, automatic door control using electronic keys, and doorphone operation.

Select the desired RFID Reader operation mode and press # to continue.

X123 DOOR NAME
ENTRANCE/EXIT >

5. Enter the day-mode destination for doorphone calls. This destination will be called when someone presses the CALL key on the RFID Reader while the system or tenant is in day mode.
   (For no day-mode destination, press HOLD.2)
   Default: Extension 100.
   Select a station, mailbox, or branch ID by pressing a scroll key and then entering a new value. Press # to continue.

X123 RFID DOOR
DAY: 100

6. Enter the night-mode destination for doorphone calls. This destination will be called when someone presses the CALL key on the RFID Reader while the system or tenant is in night mode.
   (For no night-mode destination, press HOLD.)
   Default: Extension 100.
   Select a station, mailbox, or branch ID by pressing a scroll key and then entering a new value. Press # to continue.

X123 RFID DOOR
NIGHT: 100

---

1 You’ll see this prompt only if the ESI system has shared-office tenanting enabled in Function 169 (shared-office tenanting is unavailable on IVX S-Class Generation II).
2 If no day/night destination is selected, CALL doesn’t appear on the RFID Reader display.
Local IP RFID Reader assignment

**Important:** Local IP RFID Readers are supported by only the IP Server 900 and ESI Communications Servers (except the ESI-50L). See “System requirements and specifications,” page 4.

1. Enter the extension number of the IP RFID Reader to be programmed and press # to continue.

```
STATION PROG
EXT: 114
```

2. Use the scroll keys to select LOCAL IP READER and press # to continue.

```
X114 TYPE
LOCAL IP READER
```

3. Now you’ll enter the local IP RFID Reader’s MAC address, which appears on the second line of the IP RFID Reader’s display when the device is powered-up. The MAC address is a 12-character alphanumeric address, the first six characters of which will always be 00 30 4D (of course, the display below is merely for use as an example and shouldn’t be assumed to show the address you’ll be entering). Enter the complete 12-character alphanumeric address. If programming using an ESI desktop IP phone, use the first six programmable feature keys to enter the letters A, B, C, D, E, or F, respectively.

```
X114 MAC ADDRESS
> 
```

4. Enter the name of the IP RFID Reader. The name can be up to 10 characters long. Suggested names include the name of the entrance (“MAIN LOBBY”) or room (“STORAGE”) near which the IP RFID Reader is mounted.

Press # to continue.

```
X114 READER NAME
NAME:
```

**Notes:** Refer to the ESI system’s Installation Manual for instructions on entering alphanumeric characters.

If using an ESI system on which tenanting either isn’t enabled or isn’t available, skip to step 6.

(Continued)
5. Enter the tenant and press # to continue.¹

6. Select the IP RFID Reader operation mode:
   - **Entrance/exit** — Used for entry doors into buildings or suites. Supports presence status, phone control, and attendance records. (Default.)
   - **Access only** — Used for doors to secure areas. Doesn’t provide in and out status, Personal Call Routing, or attendance records.

   Both modes support remote door unlocking, automatic door control using electronic keys, and doorphone operation.

   Select the desired IP RFID Reader operation mode and press # to continue.

7. Enter the day-mode destination for doorphone calls. This destination will be called when someone presses the CALL key on the IP RFID Reader while the system or tenant is in day mode.
   (For no day-mode destination, press HOLD.²)
   **Default:** Extension 100.
   Select a station, mailbox, or branch ID by pressing a scroll key and then entering a new value.
   Press # to continue.

8. Enter the night-mode destination for doorphone calls. This destination will be called when someone presses the CALL key on the IP RFID Reader while the system or tenant is in night mode.
   (For no night-mode destination, press HOLD.)
   **Default:** Extension 100.
   Select a station, mailbox, or branch ID by pressing a scroll key and then entering a new value.
   Press # to continue.

¹ You’ll see this prompt only if the ESI system has shared-office tenanting enabled in Function 169.
² If no day/night destination is selected, CALL doesn’t appear on the RFID Reader display.
Remote IP RFID Reader assignment

Important: Remote IP RFID Readers are supported by only the IP Server 900 and ESI Communications Servers (except the ESI-50L). See “System requirements and specifications,” page 4.

Before starting this programming, be sure you know the IP address the remote IP RFID Reader will be using at its remote site, because you have to enter this information in this procedure.

1. Enter the extension number of the IP RFID Reader to be programmed and press # to continue.

   
   STATION PROG
   EXT: 115

2. Use the scroll keys to select REMOTE IP READER and press # to continue.

   
   X115 TYPE
   REMOTE IP READER

3. Now you’ll enter the remote IP RFID Reader’s MAC address, which appears on the second line of the IP RFID Reader’s display when the device is powered-up. The MAC address is a 12-character alphanumeric address, the first six characters of which will always be 00 30 4D. Enter the complete 12-character alphanumeric address. If programming using an ESI desktop IP phone, use the first six programmable feature keys to enter the letters A, B, C, D, E, or F, respectively.

   
   X115 MAC ADDRESS

4. Now you’ll enter the IP address that the IP RFID Reader will be using at its remote site.

   Enter this address in dotted-quad notation (for example, 192.168.1.3) by using the # key as the period between octets. The remote RFID Reader must be on the same subnet as the LAN interface of the gateway device (cable modem, router, etc.). For example: if the LAN interface’s IP address is 192.168.210.1 and its subnet mask is 255.255.255.0, the first three octets of the phone’s address must be 192.168.210 and its last octet between 2 and 254.

   
   X115 IP ADDRESS
   0.0.0.0

5. Enter the valid subnet mask of the gateway device to which the remote IP RFID Reader will be connected. Range: 128.0.0.0 through 255.255.255.252. Default: 0.0.0.0.

   
   X115 IP MASK
   0.0.0.0

6. Enter the IP address of the remote IP RFID Reader’s gateway — i.e., the LAN interface of the gateway device at the remote site. The RFID Reader must be on the same subnet as the LAN interface of the remote gateway.

   
   X115 GATEWAY IP
   0.0.0.0

(Continued)
7. Enter the remote IP RFID Reader’s UDP port. It doesn’t have to be the same as for the IP PBX (as programmed in Function 81). The UDP port for the IP RFID Reader must be one that the remote WAN gateway can program as “open,” and must not be already assigned to another device at the remote site.

> **Important:** The remote gateway will have to be programmed to recognize that traffic destined for that UDP port should be allowed to pass through its security system.

If the remote gateway can’t open the UDP port — or if that port is already open but designated for another device — the Installer can choose any other UDP port number, 10000–65000, inclusive.

8. Enter the IP address that will be used for remote access to the ESI system. The display will default to the IP address entered in Function 82.¹ If a remote IP RFID Reader will use this address to connect to the system, press # to confirm; if a remote IP RFID Reader will use an alternate IP address to connect to the system, enter that address and press # to confirm.

The message SAVE PARAMETERS? will appear on the display. If you have correctly entered the IP addressing parameters (steps 1–7), press # to program the parameters for any remote IP RFID Reader; or, to abort programming, press * to restore the system parameters to their previously set values.

9. Enter the name of the IP RFID Reader. The name can be up to 10 characters long. Suggested names include the name of the entrance (“MAIN LOBBY”) or room (“STORAGE”) near which the IP RFID Reader is mounted.

Press # to continue.

10. Enter the tenant and press # to continue.²

---

¹ See the IP Server 900 Programming Manual (ESI # 0450-1307) or ESI Communications Servers Programming Manual (ESI # 0450-1050).

² You’ll see this prompt only if the ESI system has shared-office tenanting enabled in Function 169.
11. Select the IP RFID Reader operation mode:
   - **Entrance/exit** — Used for entry doors into buildings or suites. Supports presence status, phone control, and attendance records. (Default.)
   - **Access only** — Used for doors to secure areas. Doesn’t provide in and out status, Personal Call Routing, or attendance records.

Both modes support remote door unlocking, automatic door control using electronic keys, and doorphone operation.

Select the desired IP RFID Reader operation mode and press # to continue.

```
X115 DOOR NAME
ENTRANCE/EXIT >
```

12. Enter the day-mode destination for doophone calls. This destination will be called when someone presses the CALL key on the IP RFID Reader while the system or tenant is in day mode.
   (For no day-mode destination, press HOLD.)
   **Default**: Extension 100.
   Select a station, mailbox, or branch ID by pressing a scroll key and then entering a new value.
   Press # to continue.

```
X115 RFID DOOR
DAY: 100
```

13. Enter the night-mode destination for doophone calls. This destination will be called when someone presses the CALL key on the IP RFID Reader while the system or tenant is in night mode.
   (For no night-mode destination, press HOLD.)
   **Default**: Extension 100.
   Select a station, mailbox, or branch ID by pressing a scroll key and then entering a new value.
   Press # to continue.

```
X115 RFID DOOR
NIGHT: 100
```

---

1 If no day/night destination is selected, CALL doesn’t appear on the RFID Reader display.
Function 37 — RFID programming

Choices are:

- 1 — Access control schedule programming.
- 2 — RFID tag assignment.
- 3 — View RFID tag number.
- 4 — ESI Presence Management ("EPM" on the phone display) parameters.
- 5 — RFID Reader parameters.

Function 371 — Access schedule programming

Access schedules are used to allow or deny door access with electronic keys ("RFID tags" on the system display) at certain times of the day. Up to seven access schedules can be programmed. Each schedule has an allow access time and a deny access time for each day of the week. By default, all access schedules allow access 24 hours a day, seven days a week.

**Note:** Access schedules don’t take effect until the current time has passed the next schedule time. For example: if you program a schedule time to deny access Wednesdays at 5:30 PM but it’s already 5:45 PM on Wednesday when this programming occurs, the change won’t take effect until the following Wednesday.

1. Using the scroll keys, select the access schedule to be programmed. Press # to confirm.
   Range: 1–7.

   **Note:** Schedule 0 (default of full-time access) isn’t selectable.

2. Enter the name of the schedule (up to 10 characters in length).
   Press # to confirm.
   Default: ACC SCHED[x], where [x] represents the access schedule selected in step 1.

3. Use the scroll keys to select the day of the week to program for the selected access schedule.
   Press # to confirm.

4. Enter the allow time — the time when an electronic key user can begin controlling door locks — in 12-hour format. (To delete an entry, press HOLD.)
   Press # to confirm when done.

(Continued)
5. Select AM or PM by pressing a scroll key. Press # to confirm.

ACC SCHED1 MON
ALLOW: 900 AM

If you haven’t yet assigned a deny time (next step) for this schedule, the display will show something like:

ACC SCHED1 MON
NO DENY TIME

6. Now, enter the deny time — the time when an electronic key user begins to be denied door lock control — in 12-hour format. (To delete an entry, press HOLD.) Press # to confirm when done.

ACC SCHED1 MON
DENY: 700 >

7. Select AM or PM by pressing a scroll key. Press # to confirm.

ACC SCHED1 MON
DENY: 700 PM

8. Press # again to exit the function, or select another day of the week by using the scroll keys and then go back to step 4.

**Function 372 — RFID tag number programming**

As described earlier in this document, each electronic key has an embedded unique RFID tag number. This function is used to associate each RFID tag number to an extension or mailbox for Personal Call Routing and presence indication (except mailboxes). If Personal Call Routing or presence indication is not desired but access control is required, enter 0 instead of an extension or mailbox number.

1. Enter an RFID tag number, or use the scroll keys to select from the list of tag numbers (see the Note on page 13). (To delete a tag number, press HOLD.) Press # to confirm.

TAG ID: 2
9012345678 >

The tag ID is the list index of the RFID tag number.

**Note:** If a tag number is entered manually but the 500-tag limit has been exceeded, “LICENSE EXCEEDED” will appear on the display. Therefore, you must either delete one or more unassigned tag numbers or purchase additional licenses to add new tag numbers. To view the system’s total number of RFID licenses, use Function 81 (see page 25).

2. Enter the extension or mailbox number to which you wish to assign the tag number. If no extension or mailbox is to be assigned this tag number, press 0. (To delete an entry, press HOLD.) Press # to confirm.

RFID TAG PROG
EXT OR MB:
3. Enter the extension numbers of the RFID Readers for which this tag is allowed to control door access. To give the tag access to all doors, press FLASH. (To delete an entry, press HOLD.) Press # after each entry and then press # again to confirm (in other words: after the last entry, you’ll press # twice).

Note: If all RFID Readers are allowed, “ALL” will appear on the second line.

DOOR ACCESS:
123 124 138 >

The following table indicates the maximum individual RFID Reader extension number entries that you can enter for each compatible system, with system software versions listed where applicable:

<table>
<thead>
<tr>
<th>System</th>
<th>Max. entries</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Server 900</td>
<td>32</td>
</tr>
<tr>
<td>ESI-1000</td>
<td>64</td>
</tr>
<tr>
<td>ESI-600 (v. 16.x.x or higher)</td>
<td>32</td>
</tr>
<tr>
<td>ESI-600 (v. 15.1.x or 15.2.x)</td>
<td>10</td>
</tr>
<tr>
<td>ESI-200</td>
<td>32</td>
</tr>
<tr>
<td>ESI-100</td>
<td>16</td>
</tr>
<tr>
<td>ESI-50</td>
<td>10</td>
</tr>
<tr>
<td>ESI-50L</td>
<td>10</td>
</tr>
<tr>
<td>IVX S-Class Generation II (v. 4.6.0 or higher)</td>
<td>10</td>
</tr>
<tr>
<td>IVX X-Class (v. 10.7.0 or higher)</td>
<td>10</td>
</tr>
<tr>
<td>IVX E-Class Generation II (v. 2.6.0 or higher)</td>
<td>10</td>
</tr>
</tbody>
</table>

4. Use the scroll keys to select an access schedule. Access schedules are used to allow or deny door access with an electronic key at certain times of the day. Each day of the week can have a start time to allow access and a stop time to deny access. To allow constant (“full”) door access, select 0 - FULL. Otherwise, select a schedule to restrict access. The schedule name will appear.

Range: 1–7. Default: 0 (full).

Note: You assign access schedules in Function 371 (see page 21).

ACCESS SCHEDULE:
0 - FULL >

Function 373 — View RFID tag number

This is used to display tag numbers that are associated to extensions or mailboxes. You can only view tag numbers with this function. You cannot change any tag numbers or assignments.

Enter the station or mailbox number to display, and then press #. If there’s an RFID tag number assigned to that extension or mailbox, it will appear.

RFID TAG DISPLAY
EXT:

Tip: You can use ESI System Programmer, Esi-Access, or Esi-Admin (depending on the ESI system, of course) to print out a list of assigned tag numbers.
Function 374 — ESI Presence Management (“EPM”) parameters

Playing prompts

This determines whether the system plays a prompt — and, if so, which one — when the RFID Reader reads an electronic key. Select YES to enable playing of the prompt or NO to disable playing of the prompt.

Default: YES (a prompt will play).

![EPM RFID Reader Prompts: YES >](image)

When this function is set to NO, no prompts will play through the RFID Reader. When “EPM RFID Reader prompts” is set to YES, prompts will play as shown below. (These prompts can’t be customized.)

<table>
<thead>
<tr>
<th>When the RFID Reader displays:</th>
<th>It plays this prompt:</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELCOME</td>
<td>“Welcome”</td>
</tr>
<tr>
<td>GOODBYE</td>
<td>“Goodbye”</td>
</tr>
<tr>
<td>ACCESS DENIED</td>
<td>“Invalid Entry”</td>
</tr>
<tr>
<td>LICENSE EXCEEDED</td>
<td>“Error”</td>
</tr>
<tr>
<td>ERROR</td>
<td>“Error”</td>
</tr>
<tr>
<td>READER FULL</td>
<td>“Error”</td>
</tr>
</tbody>
</table>

Enable/disable sending time and attendance records

Notes: For time and attendance record collection, the NSP must be programmed and connected to a local area network.

Only ESI Presence Management RFID Readers programmed as type ENTERANCE/EXIT (Function 31) generate time and attendance records.

This parameter is used when the optional WaspTime\(^1\) time and attendance management software application is used in conjunction with the ESI Presence Management RFID Reader.

Use the scroll keys to enable or disable time and attendance records, and press # to confirm.

Default: Disabled.

Store fob events

Note: On an ESI Communications Server, this function requires that an Applications Services Card (ASC) be installed in the system. (The ASC’s capabilities are built-in on the IP Server 900.)

![STORE FOB EVENTS DISABLED >](image)

Use the scroll keys to enable or disable the storage of ESI Presence Management fob events to the IP Server 900 or ASC.

Default: Disabled.

---

\(^1\) Not sold by ESI. Available by direct purchase from the manufacturer, Wasp Barcode Technologies (www.waspbarcode.com).
Function 375 — RFID Reader parameters

This function is used to adjust the doorphone speaker volume of each RFID Reader.

1. Enter the extension number of the RFID Reader.

```
EPM READER SET
EXT:
```

2. Select the volume level by using the scroll keys.

```
X211 FRONT DOOR
VOLUME: 6 >
```

Range: 1–8, with 8 as the highest. Default: 4.

Function 81 — Display licenses

Function 81 is used to view the RFID tag license information — i.e., allows you to see how many RFID tags (up to the maximum of 500) are available for enabling. Parameters include:

- **Max** — The total number of licenses (users) that can have the feature enabled. **This will always be 500.**
- **Used** — The total number of licenses in use.

```
LICENSE TAG
MAX:500 USED:0
```
User programming

Personal Call Routing

Personal Call Routing automatically redirects a station user’s calls when the user exits the office using an electronic key with an RFID Reader in Entrance/exit mode. Entry settings are used for call handling when the user is in the office. Exit settings are used to handle calls when the individual is out of the office. Quiet-time settings are used to stop call forwarding and message delivery for a set period each day.

A quick reference of user programming functions for Personal Call Routing begins below. For more information about these functions, consult the ESI Presence Management User’s Guide (#0450-0793).

User programming 7: Personal Call Routing

1 – Entry settings
   - Select the personal greeting (1, 2, or 3) to play to callers when the user has entered the office.
   - Select message delivery/notification.

2 – Exit settings
   - Options: VOICE MAIL or CALL FORWARD.
     - If CALL FORWARD is selected:
       - Use the scroll keys to select an option:
         - OUTDIAL to call forward to an external number
         - EXTENSION to forward to a station
         - MAILBOX to a voice mailbox
         - REMOTE to forward calls to a remote Esi-Link location.
     - Select the personal greeting (1, 2, or 3) to be played to unanswered or rejected calls when you exit the office.

3 – Quiet time settings
   - Select the day of week using the scroll keys.
   - Enter quiet time on.
   - Enter quiet time off.

(Continued)

---

1 This feature is available only if the System Administrator enables it on the station.
Note: Personal Call Routing to an external number uses the standard ESI call-forwarding/off-premises feature. To let users set Personal Call Routing to an external number, that user’s extension must be allowed the following capabilities under Functions 31 and 32.

Function 31 — Extension definition and routing

- CO line group — Assign the CO line group that the user will be allowed to call forward calls to.

Function 32 — Extension feature authorization

- External forwarding — allows the station user to use the call forwarding off-premises and off premises reach-me features.
- Forwarding to toll numbers — this feature is used in conjunction with external forwarding. When enabled, this feature lets the user program a long-distance number for external forwarding.
- Trunk-to-trunk transfer — When enabled, this lets the station user initiate a trunk-to-trunk transfer. This feature must be enabled for external call forwarding to succeed.

IMPORTANT: USE OF FEATURES, SUCH AS TRUNK-TO-TRUNK TRANSFER, THAT REQUIRE TRUNK-TO-TRUNK CONNECTIONS WILL INCREASE THE RISK OF TOLL FRAUD. IN NO EVENT SHALL ESI (ESTECH SYSTEMS, INC.) BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES WHATSOEVER INCLUDING, BUT NOT LIMITED TO, FRAUDULENT TOLL CHARGES, LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTIONS, OR ANY OTHER COSTS OR DAMAGES RELATED THERETO ARISING FROM THE USE OF THESE FEATURES.

Note: These parameters must also be set when a user wishes to use the off-premises “reach-me” feature (using personal greeting 2). For more information about these features and others, refer to the specific system’s Installation Manual.

Remote door unlock feature key

The key code for the remote door unlock feature key is 5 8 1. This feature key may be assigned to any ESI desktop phone (digital or IP). When the remote door unlock feature key is pressed while the station is connected to the RFID Reader/doorphone, a tone will sound from the RFID Reader and the door lock relay will energize, unlocking the door.

Note: The station must be connected to the doorphone in order for the remote unlock feature key to work.

This operation allows a single door unlock key to control several RFID Reader/doorphones.

---

1 To protect against unauthorized access, this feature code is not mentioned in the ESI Presence Management User’s Guide.
How to program for specific applications

Overview

Here we will be describing various applications and how to program ESI Presence Management features to support them. You can use any combination of both non-RFID and RFID features for a customer’s application. We’ll discuss non-RFID applications first, followed by some RFID applications:

• Non-RFID features
  • Doorphone/intercom
  • Manual door lock control

• RFID applications
  • Personal Call Routing
  • Access control
  • Time and attendance

Doorphone/intercom

1. Install the RFID Reader as described beginning on page 9. Remember that the weatherproof enclosure must be used if the RFID Reader will be exposed directly to rain, sleet, etc. (see “About the ESI Presence Management RFID Reader,” page 2).

   Note: Steps 2–5, below, describe an example. You should substitute settings, as needed, based on your customer’s actual preferences.

2. Program the RFID Reader in Function 31 as follows:
   a. Tenant: 1 (if Tenant service is enabled1).

      Note: The RFID Reader must always be assigned to the same tenant as the station that sets day or night mode.

   b. Operation mode: ENTRANCE/EXIT.
   c. Day mode: [Department] 290.
   d. Night mode: [Information mailbox] 300.

   Example:

<table>
<thead>
<tr>
<th>Ext.</th>
<th>Name</th>
<th>Tenant</th>
<th>Mode</th>
<th>Call key</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MAIN ENTRY</td>
<td>1</td>
<td>ENTRANCE/EXIT</td>
<td>X290</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MB300</td>
</tr>
</tbody>
</table>

3. In Function 33, program Department 290 as a ring-all department with extensions 100, 101, and 102.

4. In Function 53, assign mailbox 300 as an Info mailbox and assign the call forward destination as ID9999 (hang-up).

5. Record mailbox 300’s personal greeting as follows:

   “The office is closed. Normal business hours are from 8 AM through 5 PM Monday through Friday, and closed on weekends and holidays. Please return during normal business hours. Thank you.”

That’s it! Test the doorphone operation in both day and night modes, and you’re done installing the RFID Reader as a doorphone.

1 In IVX systems (as opposed to the IP Server 900 or ESI Communications Servers), shared tenant service is available only on IVX E-Class Generation II and IVX X-Class (but not on IVX S-Class Generation II).
Manual door lock control

What you’ll need

- An ESI Presence Management RFID Reader and the tools needed for installing it:
  — T-10 Torx screwdriver.
  — 1/8" flat-blade screwdriver.
  — #2 Phillips screwdriver.
- An electric door strike that’s already installed.
- Three wire nuts.
- Electrical tape.
- Two-conductor 20-gauge cable long enough to go between the RFID Reader and the electric door strike.
- A number 6–8 flat blade screwdriver.

Notes:
Have a trained professional install the electric door strike.

The electric door strike should already have a power cable run to it. If the electric door strike is currently in use, you’ll need to disconnect the power supply going to it first — but, before you do, make sure you have a key to the lock!

You may need to remove the electric door strike from the door jamb in order to reach the two wires coming out of it.

For the digital RFID Reader

Before continuing, you must check the serial number of the RFID Reader. You’ll find the serial number on a label on the inside-top edge of the RFID Reader’s case.

- If the RFID Reader’s serial number begins with 00345: Connect the door lock wires to terminal 5 and either terminal 4 or terminal 6 (Figure 3a on page 10), depending on the type of electric door lock. Terminal 4 is the normally open ("N.O.") contact of the relay, terminal 5 is common ("COM"), and terminal 6 is the normally closed ("N.C.") contact.¹
- If the RFID Reader’s serial number begins with 00360: Connect the door lock wires to terminals 5 and 6 (Figure 3b on page 10 or Figure 8 on page 30), if normally open contacts are used to control the door lock, the jumper on the terminal block labeled J1 must be on pins 2 and 3 (standard setting). If normally closed contacts are used to control the door lock, the jumper must be on pins 1 and 2.

An RFID Reader with a serial number that begins with 00360 also has a normally closed tamper detection switch that can be connected to a security alarm system. These connections are located on terminals 3 and 4 ("TS-A" and "TS-B," Figure 3b on page 10 or Figure 8 on page 30). The tamper detection switch is a motion detector switch; so, if the RFID Reader is installed in a location that’s subject to strong vibrations or motion, we recommend that you not connect the tamper switch to an alarm system.

1. Install the RFID Reader as described beginning on page 9. When you reach step 6 of the installation instructions, come back to step 2 below.
2. Run the cable between the electric door strike and the RFID Reader.
3. If the RFID Reader’s serial number begins with 00345:
   Connect the black wire of the cable to terminal 4 (N/O) and the red wire to terminal 5 (COM) of the screw terminal strip of the RFID Reader.
   If the RFID Reader’s serial number begins with 00360:
   Connect the black wire of the cable to terminal 6 (DL-B) and the red wire to terminal 5 (DL-A) of the screw terminal strip of the RFID Reader.
4. Look at the electric door strike. You’ll find two different color wires coming out of it. Usually there is one black and one red wire². If the wires are going to a plug, you’ll need the connector that goes to the plug (it comes with the lock).

¹ Terminal 3 is unused.
² Typically, electric door strikes are not polarity-sensitive, so it shouldn’t matter which wire is negative and which is positive.
5. Using one of the wire nuts, splice the **black** wire from the door lock to the **black** wire in the cable going to the RFID Reader (Fig. 8).

6. Using another wire nut, splice the **black** wire coming from the door lock **power supply** to the **red** wire in the cable going to the RFID Reader (Fig. 8).

7. Splice the **red** wire from the power supply to the **red** wire of the electric door strike using the third wire nut. Use the electrical tape to insulate the wire nut splices.

8. Mount the electric door strike back in the door jamb and reconnect the door lock power supply.

9. Follow the programming instructions for installing the RFID Reader as a doorphone (page 28).

10. Assign a **remote door unlock** programmable feature key with feature code **581** on the station that will be controlling the door lock.

11. Test by calling the RFID Reader extension from the phone with the remote door unlock key and then momentarily pressing the Remote Door Unlock key. The door lock should release, and the door can be opened. If the time that the door is unlocked is too short, adjust the door unlock timer in Function 157.

You’ve now completed installing manual door lock control.

---

**Note:** If "normally open" contacts are used to control the door lock, the jumper on the J1 terminal block must be on pins 2 and 3 (standard setting). If "normally closed" contacts are needed to control the door lock, the jumper must be on pins 1 and 2.

---

**Figure 8**
For the IP RFID Reader

1. Install the IP RFID Reader as described beginning on page 11. When you reach step 5 of the installation instructions, come back to step 2 below.

2. Run the cable between the electric door strike and the RFID Reader.

3. Look at the electric door strike. You’ll find two different color wires coming out of it. Usually there is one **black** and one **red** wire\(^1\). If the wires are going to a plug, you’ll need the connector that goes to the plug (it comes with the lock).

4. Using one of the wire nuts, splice the **black** wire from the door lock to one of the **orange** wires in the cable going to the IP RFID Reader (Fig. 9).

5. Using another wire nut, splice the **black** wire coming from the door lock **power supply** to the other **orange** wire in the cable going to the IP RFID Reader (Fig. 9).

6. Splice the red wire from the power supply to the red wire of the electric door strike using the third wire nut. Use the electrical tape to insulate the wire nut splices.

7. Mount the electric door strike back in the door jamb and reconnect the door lock power supply.

8. Follow the programming instructions for installing the IP RFID Reader as a doorphone (page 28).

9. Assign a **remote door unlock** programmable feature key with feature code **581** on the station that will be controlling the door lock.

10. Test by calling the IP RFID Reader extension from the phone with the remote door unlock key and then momentarily pressing the Remote Door Unlock key. The door lock should release, and the door can be opened. If the time that the door is unlocked is too short, adjust the door unlock timer in Function 157.

You’ve now completed installing manual door lock control.

---

\(^1\) Typically, electric door strikes are **not** polarity-sensitive, so it shouldn’t matter which wire is negative and which is positive.
RFID features

Reminder: All RFID features require electronic keys. Before you get started, make sure you have obtained electronic keys from ESI.

Personal Call Routing

Install the RFID Reader as described beginning on page 9. Remember that the weatherproof enclosure must be used if the RFID Reader will be exposed directly to rain, sleet, etc. (see “About the ESI Presence Management RFID Reader,” page 2). Then, for each individual who will be using Personal Call Routing, follow these programming steps:

1. In Function 31, assign the CO line group to which the user will forward calls.
2. In Function 32, assign the following:
   - External forwarding — Set to YES to allow the station user to use the call forwarding off-premises and off premises “reach-me” features.
     Default: YES.
   - Forwarding to toll numbers — Set to YES to let the user program a long-distance number for external forwarding.
     Default: NO.
   - Trunk-to-trunk transfer — Set to YES for external call forwarding to succeed.
     Default: YES.
3. In Function 372, assign the following:
   - Tag number of the user’s electronic key.\(^1\)
   - Extension number of the individual’s phone.
   - Extension number of each of the RFID Readers that the individual will be using.

   Note: The RFID Reader will not acknowledge the user’s electronic key unless the RFID Reader’s extension number is entered here.

   • The access schedule may be left at default (0 - FULL).

   Example:

<table>
<thead>
<tr>
<th>Tag no.</th>
<th>Ext./MB</th>
<th>Door access</th>
<th>Access schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>7890123456</td>
<td>115</td>
<td>123 132</td>
<td>0 - FULL</td>
</tr>
</tbody>
</table>

   (Continued)

---

\(^1\) To make it easier to input tag numbers, electronic keys can be scanned in first at the RFID Reader, then selected using a scroll key in Function 372.
4. To test, perform the following:

   a. Go to a phone you just programmed as described above, and enter user programming 72.
   b. Select *CALL FORWARD* and press #.
   c. Select *OUTDIAL* and press #.
   d. Enter an outside phone number, including the line group access code.
   e. Wave the electronic key in front of the RFID Reader.
   f. On the RFID Reader, you should see *GOODBYE* and the name of the extension.
   g. Now, look at the station's display. You'll see *OFF PREMISES* and the station's DND key will be lit.
   h. Check other phones' DSS keys for that extension; they should be lit amber (they may be "winking," depending on how Function 169 is set).
   i. Call the extension; you should immediately be forwarded to the number programmed in step 6b above.
   j. Wave the electronic key in front or the RFID Reader again.
   k. The RFID Reader will display *WELCOME*. On the phone, the DND key should be off, and DSS keys of that station should also be turned off.
   l. Call the extension; it should ring normally.
   m. To prevent other calls from following the forwarding until the user assigns his/her own Personal Call Routing, go back to the phone, enter user programming 72, select *VOICE MAIL*, and press #.

**Access control**

In this scenario, an employee is allowed to enter the office between 7:00 AM and 6:00 PM each weekday, and denied access all other times, including all day Saturday and Sunday. We’ll assign access schedule 2 for this.

1. Install, program, and test the RFID Reader for Manual door lock control as described on page 29.
2. In Function 371, select access schedule 2 and press the pound key.
3. Enter the schedule name.
4. The first day that will be scheduled will be Monday. Press the pound key to continue.
5. Enter 700 for the allow time, press the pound key, and select AM and press the pound key to confirm.
6. Enter 600 for the deny time, press the pound key, and select PM and press the pound key to confirm.
7. Select TUESDAY and repeat steps 4 and 5. Do the same for Wednesday through Friday.
8. Saturday and Sunday do not need to have any schedule times assigned, since access is denied from Friday at 6:00 PM until Monday at 7:00 AM. Therefore, NO ALLOW TIME and NO DENY TIME should be displayed for both Saturday and Sunday.

<table>
<thead>
<tr>
<th>Example: Schedule name: WEEKDAYS B</th>
<th>Allow</th>
<th>Deny</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>7:00 AM</td>
<td>6:00 PM</td>
</tr>
<tr>
<td>Tuesday</td>
<td>7:00 AM</td>
<td>6:00 PM</td>
</tr>
<tr>
<td>Wednesday</td>
<td>7:00 AM</td>
<td>6:00 PM</td>
</tr>
<tr>
<td>Thursday</td>
<td>7:00 AM</td>
<td>6:00 PM</td>
</tr>
<tr>
<td>Friday</td>
<td>7:00 AM</td>
<td>6:00 PM</td>
</tr>
<tr>
<td>Saturday</td>
<td>No allow</td>
<td>No deny</td>
</tr>
<tr>
<td>Sunday</td>
<td>No allow</td>
<td>No deny</td>
</tr>
</tbody>
</table>

(Continued)
9. In Function 372, assign the following:
   • Tag number of the individual’s electronic key
   • Extension number of the individual’s phone
   • Extension number of each of the RFID Readers that the individual will be using.

   **Note:** An RFID Reader won’t acknowledge the user’s electronic key unless that RFID Reader’s extension number is entered here.

   **Example:**

<table>
<thead>
<tr>
<th>Tag no.</th>
<th>Ext/MB</th>
<th>Door access</th>
<th>Access schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>7890123456</td>
<td>115</td>
<td>123 132</td>
<td>0 - FULL</td>
</tr>
</tbody>
</table>

10. To test, wave the electronic key between 7:00 AM and 6:00 PM; the door lock will be unlocked. If you wave the electronic key between 6:00 PM and 7:00 AM, the door won’t be unlocked, and the RFID Reader will display ACCESS DENIED.

**Time and attendance**

Before enabling the time and attendance messaging interface, the system must have a NSP, and the NSP must be connected to a local area network. Please refer to the Network Services Processor (NSP) Installation/Programming Instructions (ESI document # 0450-0574) and NSP Installation Made Simple (ESI document # 0450-0634) for instructions on getting the NSP up and running.

1. In Function 374, set TIME & ATTEND to ENABLED.

2. In Function 372, assign the following:
   • Tag number of the individual’s electronic key
   • **OPTIONAL:** Extension number of the individual’s phone — This is required only if the customer wishes to use Personal Call Routing as well. Otherwise, enter 0.
   • Extension number of each of the RFID Readers that the individual will be using.

   **Note:** An RFID Reader won’t acknowledge the user’s electronic key unless that RFID Reader’s extension number is entered here.

   • The access schedule may be left at default (0 - FULL).

3. If the Administrator has already installed WaspTime, ask him/her to have an employee wave an electronic key in front of one of the RFID Readers.

4. Ask the Administrator to view the employee’s time sheet for today; the tag number event should appear on the time sheet.

**Access door report**

**Note:** Available only on the IP Server 900 and ESI Communications Servers.

The ESI Presence Management access door report is available to the Installer and System Administrator, and is based on historical data for the desired access door RFID Reader.

The report contains records of extensions/mailboxes, names, RFID tag numbers, and the date and time from the 10,000 most recent records for access-only door (not entrance/exit) RFID Readers in the system. Once the limit of 10,000 is reached, older records are discarded as newer records are stored. Initializing the system deletes all stored records.

(Continued)

1 Remember: To make it easier to enter tag numbers, scan electronic keys in first at the RFID Reader, then select tag numbers using a scroll key in Function 372.

2 Not sold by ESI; available for direct purchase from the manufacturer, Wasp Barcode Technologies (www.waspbarcode.com).

3 For more information, refer to the documentation supplied with the third-party WaspTime software application.
1. In Function 72, enter the extension number of the desired access door RFID Reader, and press #.

   EPM READER
   EXT: 123

2. Enter the **start time** in 12-hour, HHMM format, and press #.

   ENTER START TIME

3. Use the scroll keys to select **AM** or **PM** for the start time, and press #.

   ENTER AM OR PM

4. The eight-digit **start date** for this report is composed of two digits for the month, two digits for the day, and four digits for the year. The start date should be today’s date or earlier. Enter the start date in **MMDDYYYY** format, and press #.

   ENTER START DATE

5. Enter the **end time** in 12-hour, HHMM format, and press #.

   ENTER END TIME

6. Use the scroll keys to select **AM** or **PM** for the end time, and press #.

   ENTER AM OR PM

7. The eight-digit **end date** for this report is composed of two digits for the month, two digits for the day, and four digits for the year. The end date should be no earlier than the start date. Enter the end date in **MMDDYYYY** format, and press #.

   ENTER END DATE

8. To print the report, press 1 and then #.

   PRESS 1 TO PRINT
   REPORT

See the next page for an example of an access door report.
Shown below is an example of an RFID Reader access door report with the following parameters:

- Extension: 123.
- Start time: 7:00 AM.
- Start date: October 11, 2011 (entered as 10112011).
- End time: 2:00 PM.
- End date: [Same as the start date.]

<table>
<thead>
<tr>
<th>Access Door Report</th>
<th>Page 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFM Reader</td>
<td>123</td>
</tr>
<tr>
<td>Start:</td>
<td>10/11/2011 7:00 AM</td>
</tr>
<tr>
<td>Ext/MB</td>
<td>Name</td>
</tr>
<tr>
<td>0103</td>
<td>TOM</td>
</tr>
<tr>
<td>0103</td>
<td>TOM</td>
</tr>
<tr>
<td>0102</td>
<td>GREG</td>
</tr>
<tr>
<td>0103</td>
<td>TOM</td>
</tr>
<tr>
<td>0000</td>
<td></td>
</tr>
<tr>
<td>0108</td>
<td>DAVID T</td>
</tr>
<tr>
<td>0109</td>
<td>BILL</td>
</tr>
<tr>
<td>0110</td>
<td>DAVID M</td>
</tr>
<tr>
<td>0111</td>
<td>DEREK</td>
</tr>
<tr>
<td>0112</td>
<td>STEVE W</td>
</tr>
<tr>
<td>0108</td>
<td>DAVID T</td>
</tr>
<tr>
<td>0108</td>
<td>DAVID T</td>
</tr>
</tbody>
</table>

Report Complete

**Note:** Extensions and mailboxes are reported as four digits.
RFID tags that haven’t been assigned an extension or mailbox are reported as 0000.
## RFID Reader display reference

<table>
<thead>
<tr>
<th>Display</th>
<th>What it means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle display.</td>
<td></td>
</tr>
<tr>
<td><strong>12/14 12:07 PM CALL</strong></td>
<td>Important: If no destination has been assigned for the CALL key, CALL won’t appear.</td>
</tr>
<tr>
<td><strong>12/14 12:07 PM CONNECTED</strong></td>
<td>The RFID Reader/doorphone has called (or received a call), and is connected to an extension. The two individuals may now converse.</td>
</tr>
<tr>
<td><strong>CARD READ</strong></td>
<td>This appears when an electronic key not already assigned in Function 372 is waved in front of an RFID Reader for the first time.</td>
</tr>
<tr>
<td><strong>WELCOME C LEE</strong></td>
<td>A user has waved a valid electronic key in front of an RFID Reader. (If the user waves the electronic key again, GOODBYE will appear; see next item). Now, the user’s extension or mailbox will change to “Entry” mode and Personal Call Routing (if assigned) will be deactivated. Also: if an electric door lock is installed and connected, the door will be unlocked.</td>
</tr>
<tr>
<td>(Appears for several seconds)</td>
<td></td>
</tr>
<tr>
<td><strong>GOODBYE C LEE</strong></td>
<td>This appears for several seconds after a user waves a valid electronic key in front of an RFID Reader. (If the user waves the electronic key again, WELCOME will appear; see previous item). Now, the user’s extension or mailbox will change to “Exit” mode and Personal Call Routing (if assigned) will be activated. Also: if an electric door lock is installed and connected, the door will be unlocked.</td>
</tr>
<tr>
<td>(Appears for several seconds)</td>
<td></td>
</tr>
<tr>
<td><strong>ACCESS DENIED</strong></td>
<td>A user has waved an electronic key in front of an RFID Reader, and the electronic key fits one or more of the following conditions:</td>
</tr>
<tr>
<td>(Appears for several seconds)</td>
<td>• Its tag number hasn’t been assigned in Function 372.</td>
</tr>
<tr>
<td></td>
<td>• It’s denied access at that RFID Reader (Function 372).</td>
</tr>
<tr>
<td></td>
<td>• It’s denied access by the access schedule programmed in Function 371 and assigned in Function 372.</td>
</tr>
<tr>
<td><strong>Note:</strong> If this appears, ESI Presence Management will perform no other action — i.e. the extension or mailbox mode will not change, the door lock will not be controlled, and no time and attendance record will be sent.</td>
<td></td>
</tr>
<tr>
<td><strong>ERROR READER FULL</strong></td>
<td>The time and attendance messaging interface is enabled, and the time and attendance record storage in the system has reached its maximum.¹</td>
</tr>
</tbody>
</table>

¹ The maximum number of time and attendance records that can be stored is 20,000 (except for IVX S-Class Generation II, where the limit is 4,000).
Troubleshooting

Here we’ll go over some common problems and how to troubleshoot them.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Troubleshooting steps</th>
</tr>
</thead>
</table>
| **Call key won’t ring extension or go to mailbox** | • Verify the extension or mailbox number is entered correctly in the RFID assignment in Function 31.  
• Make sure the system is in the correct day or night mode by assigning a programmable feature key with feature code 5 6 0. |
| **Remote door unlock key won’t unlock door** | • Verify the door unlock key is programmed with feature code 5 8 1.  
• Remember that the extension with the remote door unlock key must be on a call with the door phone for the remote door unlock key to work  
• Verify the door lock power supply is providing the correct voltage for the door lock.  
• Make sure the door lock power supply is plugged into a working outlet  
• Make sure the door lock is connected as described beginning on page 28  
• Using a digital multimeter, perform the following test:  
  1. Set the multimeter to 20 to 100 volts DC voltage.  
  2. Measure across screw terminals 4 and 5 of the RFID Reader; you should see a reading of 12 or 24 volts.\(^1\)  
  3. Have someone attempt to unlock the door using the remote door unlock feature key; the multimeter reading should drop to zero for a few seconds. |
| **Electronic key won’t unlock door** | • Make sure the tag number of the electronic key is entered correctly and the extension number of the RFID Reader is entered under DOOR ACCESS in Function 372 for that tag number.  
• If not already assigned, in Function 372 assign access schedule 0 - FULL to the tag number.  
  – If the electronic key now unlocks the door, then there is a problem with the access schedule assignment. Verify that the last scheduled time was not a Deny time. |
| **RFID Reader shows LICENSE EXCEEDED when electronic key is read** | • To verify the number of licenses in use, enter Function 81.  
  – Before you can add a new electronic key, the number of RFID licenses listed as “USED” must be fewer than 500 (the system maximum).  
  • Print out a program report or use (depending on the system) ESI System Programmer or Esi-Access to search for any unused tag numbers that can be deleted. (If all are in use, the customer must decide which can be deleted — for example, whether some employees could let others in due to overlapping work schedules.)  
  • In Function 372, delete unused (or otherwise expendable) tag numbers by pressing HOLD.  
  – Using a digital multimeter, perform the following test:  
    1. Set the multimeter to 20 to 100 volts DC voltage.  
    2. Measure across screw terminals 4 and 5 of the RFID Reader; you should see a reading of 12 or 24 volts.\(^1\)  
    3. Have someone attempt to unlock the door using the remote door unlock feature key; the multimeter reading should drop to zero for a few seconds. |
| **Phone won’t go into/out of OFF PREMISES** | • Verify that the extension number is assigned to the tag number of the electronic key in Function 373. |
| **The extension name doesn’t appear when an electronic key is scanned by the RFID Reader** | • Does the RFID Reader display the date and time?  
  – If not, try connecting the RFID Reader to a different digital port at the terminal block.  
  • Verify the door phone feature works.  
  – If the door phone doesn’t work, try disconnecting and reconnecting the RFID Reader.  
  • Try another electronic key.  
  – If the other electronic key scans OK, then the original key is defective.  
  – If the other key doesn’t work, then replace the RFID Reader. |

---

\(^1\) Depending on the power supply rating.
Glossary

DSS — Direct station select.
LCD — Liquid crystal display.
NSP — Network Services processor
RFID — Radio frequency identification.
Tag — RFID transponder.

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