Cisco ISA 3000 Hardware Installation Guide

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Cisco ISA 3000 Hardware Installation Guide
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Cisco ISA 3000 Industrial Security Appliance Hardware Installation Guide

This preface describes the objectives, audience, organization, and conventions of this guide and describes related documents that have additional information. It contains the following sections:

- Objective, page 5
- Audience, page 5
- Organization, page 6
- Conventions, page 6
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- Related Documentation, page 12
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Objective

This guide provides an overview and explains how to install, connect, and perform initial configuration for the Cisco ISA 3000 Industrial Security Appliance.

Audience

This guide is intended for people who have a high level of technical ability, although they may not have experience with Cisco software.
Organization

This guide is organized into the following chapters.

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1</td>
<td>Chapter 1, “Product Overview”</td>
<td>Describes the security appliance models and the hardware features available.</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>Chapter 2, “Installing the Cisco ISA 3000 Industrial Security Appliance”</td>
<td>Lists the items shipped with the security appliance, the equipment and tools necessary for installing the security appliance, the safety warnings and guidelines, and the procedures for installing the security appliance.</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>Chapter 3, “Connecting the ISA 3000”</td>
<td>Describes typical connections for the security appliance, procedures for connecting the security appliance to various devices, and how to verify the connections.</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>Chapter 5, “Technical Specifications”</td>
<td>Provides the security appliance, port, and cabling specifications.</td>
</tr>
</tbody>
</table>

Conventions

This section describes the conventions used in this guide.

<table>
<thead>
<tr>
<th>Note</th>
<th>Means reader take note. Notes contain helpful suggestions or references to additional information and material.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caution</td>
<td>This symbol means reader be careful. In this situation, you might do something that could result in equipment damage or loss of data.</td>
</tr>
<tr>
<td>Tip</td>
<td>Means the following information will help you solve a problem. The tip information might not be troubleshooting or even an action, but could be useful information.</td>
</tr>
</tbody>
</table>

Safety Warnings

| Caution | If this product will be installed in a hazardous location, read the Getting Started/Printed Document of Compliance included in the package. |
Warning

IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Waarschuwing

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico’s en dient u op de hoogte te zijn van de standaard praktijken om ongelukken te voorkomen. Gebruik het nummer van de verklaring onderaan de waarschuwing als u een vertaling van de waarschuwing die bij het apparaat wordt geleverd, wilt raadplegen.

BEWAAR DEZE INSTRUCTIES

Varoitus

TÄRKEITÄ TURVALLISUUSOHJEITA


SÄILYTÄ NÄMÄ OHJEET

Attention

IMPORTANTES INFORMATIONS DE SÉCURITÉ


CONSERVEZ CES INFORMATIONS

Warnung

WICHTIGE SICHERHEITSHINWEISE


BEWAHREN SIE DIESE HINWEISE GUT AUF.
Avvertenza  IMPORTANTI ISTRUZIONI SULLA SICUREZZA

Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di intervenire su qualsiasi apparecchiatura, occorre essere al corrente dei pericoli relativi ai circuiti elettrici e conoscere le procedure standard per la prevenzione di incidenti. Utilizzare il numero di istruzione presente alla fine di ciascuna avvertenza per individuare le traduzioni delle avvertenze riportate in questo documento.

CONSERVARE QUESTE ISTRUZIONI

Advarsel  VIKTIGE SIKKERHETSINSTRUKSJONER

Dette advarselssymbolet betyr fare. Du er i en situasjon som kan føre til skade på person. Før du begynner å arbeide med noe av utstyret, må du være oppmerksom på farene forbundet med elektriske kretser, og kjenne til standardprosedyrer for å forhindre ulykker. Bruk nummeret i slutt av hver advarsel for å finne oversettelsen i de oversatte sikkerhetsadvarslene som fulgte med denne enheten.

TA VARE PÅ DISSE INSTRUKSJONENE

Aviso  INSTRUÇÕES IMPORTANTES DE SEGURANÇA

Este símbolo de aviso significa perigo. Você está em uma situação que poderá ser causadora de lesões corporais. Antes de iniciar a utilização de qualquer equipamento, tenha conhecimento dos perigos envolvidos no manuseio de circuitos elétricos e familiarize-se com as práticas habituais de prevenção de acidentes. Utilize o número da instrução fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham este dispositivo.

GUARDE ESTAS INSTRUÇÕES

¡Advertencia!  INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES

Warning!  VIKTIGA SÄKERHETSANVISNINGAR


SPARA DESSA ANVISNINGAR
**FONTOS BIZTONSÁGI ELOÍRÁSOK**

Ez a figyelmezettségi jel veszélyre utal. Sérülésveszélyt rejte helyzetben van. Mielott bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplő figyelmeztetések fordítása a készülékhez mellékt biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján kereshető meg.

**ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!**

**ПРЕДУПРЕЖДЕНИЕ ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ**

Этот символ предупреждения обозначает опасность. То есть имеет место ситуация, в которой следует опасаться телесных повреждений. Перед эксплуатацией оборудования выясните, каким образом может подвергаться пользователь при использовании электрических цепей, и ознакомьтесь с правилами техники безопасности для предотвращения возможных несчастных случаев. Воспользуйтесь номером заявления, приведенным в конце каждого предупреждения, чтобы найти его переведенный вариант в переводе предупреждений по безопасности, прилагаемом к данному устройству.

**СОХРАНИТЕ ЭТИ ИНСТРУКЦИИ**

**警告 重要的安全性说明**

此警告符号代表危险。您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾提供的声明号码来找到此设备的安全性警告说明的翻译文本。

请保存这些安全性说明

**警告 安全上的重要注意事项**

「危険」の意味です。人身事故を予防するための注意事項が記述されています。装置の取り扱い作業を行うときは、電気回路の危険性に注意し、一般的な事故防止策に留意してください。警告の各国語版は、各注意事項の番号を基に、装置に付属の「Translated Safety Warnings」を参照してください。

これらの注意事項を保管しておいてください。

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이 지시 사항을 보관하십시오.
INSTRUÇÕES IMPORTANTES DE SEGURANÇA

Este símbolo de aviso significa perigo. Você se encontra em uma situação em que há risco de lesões corporais. Antes de trabalhar com qualquer equipamento, esteja ciente dos riscos que envolvem os circuitos elétricos e familiarize-se com as práticas padrão de prevenção de acidentes. Use o número da declaração fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham o dispositivo.

GUARDE ESTAS INSTRUÇÕES

Advarsel

VIGTIGE SIKKERHEDSANVISNINGER


GEM DISSE ANVISNINGER
Προειδοποίηση

ΣΗΜΑΝΤΙΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ

Αυτό το προειδοποιητικό σύμβολο σημαίνει κίνδυνο. Βρίσκετε σε κατάσταση που μπορεί να προκαλέσει τραυματισμό. Πριν εργαστείτε σε οποιοδήποτε εξοπλισμό, να έχετε υπόψη σας τους κίνδυνους που σχετίζονται με τα ηλεκτρικά καλώδια και να έχετε εξοικειωθεί με τις συνθήκες πρακτικές για την αποφυγή ατυχημάτων. Χρησιμοποιήστε τον αριθμό δήλωσης που παρέχεται στο τέλος κάθε προειδοποίησης, για να εντοπίσετε τη μετάφραση της στις μεταφρασμένες προειδοποιήσεις ασφαλείας που συνοδεύουν τη συσκευή.

ΦΥΛΑΧΤΕ ΑΥΤΕΣ ΤΙΣ ΟΔΗΓΙΕΣ

ה ActivatedRoute מתבקש tarafından

סימן זה מסמל כנף פאדו. אתה מצא בכסא עלילו החלום. לוקח תשובה על צוות כנפיים, עליר התאום לכניסה לצורה ביטולית שовать את הניהליים ולהיות לניסוח תיאטרון. השמיש במספר ההארת המוסף ב למהיל ייני את ארעה כי לאחרי את התגרום בבראשית הכנף המופלגת שמידרוף לתחילה.

שמרוшедшא עליה

Предупредуяне

ВАЖНИЕ БЕЗБЕДНОСНИ НАПАТСТВИЯ

Символ за предупредување значи опасност. Се наоѓа во ситуација што може да предизвика телесни повреди. Пред да работите со опремата, бидете свесни за ризикот што постои кај електричните копа и треба да ги познавате стандардните поставки за спречување на несреќни случаи. Искористете го бројот на изважата што се наоѓа на крајот на секое предупредување за да го најдете неговиот период во преведените безбедносни предупредувања што се испорачани со уредот.

ЧУВАЈТЕ ГИ ОВИЕ НАПАТСТВИЈА

Ostrzeżenie

WAŻNE INSTRUKCJE DOTYCZĄCE BEZPIECZEŃSTWA

Ten symbol ostrzeżenia oznacza niebezpieczeństwo. Zachodzi sytuacja, która może powodować obrażenia ciała. Przed przystąpieniem do pracy przy urządzeniach należy zapoznać się z zagrożeniami związanymi z układami elektrycznymi oraz ze standardowymi środkami zapobiegania wypadkom. Na końcu każdego ostrzeżenia podano numer, na podstawie którego można odszukać tłumaczenie tego ostrzeżenia w dołączonym do urządzenia dokumencie z tłumaczeniami ostrzeżeń.

NINIEJSZE INSTRUKCJE NALEŻY ZACHOWAĆ

Upozornenie

DÔLEŽITÉ BEZPEČNOSŤNÉ POKYNY

Tento varovný symbol označuje nebezpečenstvo. Nachádzate sa v situácii s nebezpečenstvom úrazu. Pred prácou na akomkoľvek vybavení si uvedomte nebezpečenstvo súvisiace s elektrickými obvodmi a oboznámte sa so štandardnými opatreniami na predchádzanie úrazom. Podľa čísla na konci každého upozornenia vyhľadajte jeho preklad v preložených bezpečnostných upozorneniach, ktoré sú priložené k zariadeniu.

USCHOVÁJTE SI TENTO NÁVOD
Opozorilo

POMEMBNI VARNOSTNI NAPOTKI

Ta opozorilni simbol pomeni nevarnost. Nahajate se v situaciji, kjer lahko pride do telesnih poškodb. Preden pričnete z delom na napravi, se morate zavedati nevarnosti udara električnega toka, ter tudi poznati preventivne ukrepe za preprečevanje takšnih nevarnosti. Uporabite obrazložitveno število na koncu posameznega opozorila, da najdete opis nevarnosti v priloženem varnostnem priročniku.

SHRANITE TE NAPOTKE!

警告

重要安全性指示
此警告符号代表危险，表示可能造成人身伤害。使用任何設備前，請留心電路相關危險，並熟悉避免意外的標準作法。您可以使用每項警告後的聲明編號，查詢本裝置隨附之安全性警告譯文中的翻譯。

請妥善保留此指示

---

Warning

**Hot surface. Statement 1079**

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**Related Documentation**

**ISA 3000 product page**


**ASA documentation**

- Compatibility Matrix
  

- Navigating the Cisco ASA Series Documentation
  

**CSM Documentation**

- Cisco Security Manager Documentation Roadmaps
  

**FirePOWER Documentation**

- Navigating the Cisco Firepower Documentation
  
Other Cisco Documentation

- Cisco.com: www.cisco.com
- Warranty Information: www.cisco-warrantyfinder.com

Searching Cisco Documents

To search an HTML document using a web browser, press Ctrl-F (Windows) or Cmd-F (Apple). In most browsers, the option to search whole words only, invoke case sensitivity, or search forward and backward is also available.

To search a PDF document in Adobe Reader, use the basic Find toolbar (Ctrl-F) or the Full Reader Search window (Shift-Ctrl-F). Use the Find toolbar to find words or phrases within a specific document. Use the Full Reader Search window to search multiple PDF files simultaneously and to change case sensitivity and other options. Adobe Reader’s online help has more information about how to search PDF documents.
Product Overview

This chapter provides an overview of the features available for the Cisco ISA 3000 and contains the following sections:

- General Description, page 1-15
- SKU Information, page 1-21
- Hardware Overview, page 1-21

General Description

The Cisco ISA 3000 is a DIN Rail mounted ruggedized industrial security appliance that provides firewall, threat defense, and VPN services. The term DIN Rail describes a metal rail of a standard type widely used for mounting circuit breakers and industrial control equipment inside equipment racks. The term derives from the original specifications published by Deutsches Institut für Normung (DIN) in Germany. The device can run either the ASA or Firepower Threat Defense operating system.

The Cisco ISA 3000 is low-power, fan-less, with Gigabit Ethernet and a dedicated management port. There are two SKUs:

- ISA3000-4C-K9 — Copper SKU with 4x10/100/1000Base-T with a management port.
- ISA3000-2C2F-K9 — Fiber SKU with 2x1GbE SFP and 2x10/100/1000Base-T with a management port.

Figure 1-1 and Figure 1-2 show the Cisco ISA 3000 Copper and Fiber SKUs.
Figure 1-1  Cisco ISA 3000 Copper SKU
Figure 1-2  Cisco ISA 3000 Fiber SKU
Figure 1-3 shows the front panel details of the Cisco ISA 3000.

**Figure 1-3 Cisco ISA 3000 Front Panel**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reset Pinhole Access</td>
</tr>
<tr>
<td>2</td>
<td>Console LED</td>
</tr>
<tr>
<td>3</td>
<td>System LED</td>
</tr>
<tr>
<td>4</td>
<td>Console connector (RJ-45)</td>
</tr>
<tr>
<td>5</td>
<td>Console connector (mini-USB)</td>
</tr>
<tr>
<td>6</td>
<td>USB connectors</td>
</tr>
<tr>
<td>7</td>
<td>Management Interface</td>
</tr>
<tr>
<td>8</td>
<td>DC power connection A</td>
</tr>
<tr>
<td>9</td>
<td>DC power connection B</td>
</tr>
<tr>
<td>10</td>
<td>RJ45 10/100/100 BaseT Connectors 1&amp;2</td>
</tr>
<tr>
<td>11</td>
<td>On the ISA-3000-2C2F SKU, these are the SFP sockets. On the ISA-3000-4C SKU, these are RJ45 10/100/100 BaseT Connectors 3&amp;4,</td>
</tr>
<tr>
<td>12</td>
<td>1GB removable SD flash memory card slot</td>
</tr>
<tr>
<td>13</td>
<td>Alarm Connectors</td>
</tr>
<tr>
<td>14</td>
<td>Grounding Point</td>
</tr>
<tr>
<td>15</td>
<td>Alarm LEDs</td>
</tr>
<tr>
<td>16</td>
<td>DC Power LEDs</td>
</tr>
<tr>
<td>17</td>
<td>Gig Ethernet LEDs</td>
</tr>
<tr>
<td>18</td>
<td>Management LED</td>
</tr>
</tbody>
</table>
LEDs

The following table describes the LEDs for the Cisco ISA3000.

<table>
<thead>
<tr>
<th>LED</th>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>Power Status</td>
<td>Off — No power</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Normal operation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Flashing — Boot up phase</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Flashing — BIOS and POST</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red — System is not functioning properly.</td>
</tr>
<tr>
<td>MGMT</td>
<td>Management Port Status</td>
<td>Off — No link (default)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Port link with no activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Flashing — Transmitting and Receiving data</td>
</tr>
<tr>
<td>DC_A</td>
<td>DC Power Status</td>
<td>Off — Power is not present</td>
</tr>
<tr>
<td>DC_B</td>
<td></td>
<td>Green Steady on — Power is present on the associated circuit. (Hardware controlled)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Steady on — Power is not present on the associated circuit, and the system is configured for dual-input power.</td>
</tr>
<tr>
<td>Alarm Out</td>
<td>Alarm monitoring</td>
<td>Off — Alarm Out not configured or the system is off (Default)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Alarm Out is configured, no alarm detected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Steady on — Minor alarm detected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Flashing — Major alarm detected</td>
</tr>
<tr>
<td>Alarm In 1&amp;2</td>
<td>Alarm monitoring</td>
<td>Off — Alarm In not configured or the system is off (Default)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Alarm In is configured, no alarm detected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Steady on — Minor alarm detected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Flashing — Major alarm detected</td>
</tr>
<tr>
<td>Ethernet Ports</td>
<td>Link Status</td>
<td>Off — No link</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Link is up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Flashing — Transmitting and Receiving data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amber — Fault, check log</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Port 1&amp;2 and in the copper SKU, 3&amp;4 LEDs fast blink amber together — Those two ports are in bypass mode.</td>
</tr>
<tr>
<td>Console</td>
<td>Console connection Status</td>
<td>Off — RJ-45 is being used for console</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green — Mini USB is being used for console</td>
</tr>
</tbody>
</table>
Memory and Storage

The Cisco ISA 3000 has the following:

- 8-GB DRAM (soldered down).
- 16-GB onboard flash memory
- mSATA 64Gb
- 1-GB removable SD flash memory card - industrial temp

USB Ports

The Cisco ISA 3000 has two externally accessible Type-A USB (4-pin) connectors. Each USB port will support output powering of 5 volts and up to a maximum of 500 mA.

Management Ethernet Port

A management-only 10/100/1000 BaseT Ethernet port is provided. This port will be the only port able to be used for booting over the network, or for initial setup and management of the system. This port is Management 1/1 in the configuration.

Console Port

The Cisco ISA 3000 can be configured through a web interface, or through the console port. The console port is either a RJ45 or a Mini USB connector. A standard management cable (Part number 72-3383-01) can be used to convert the RJ45 to DB9 connector.

The default configuration settings for the RJ45 console port are:
9600 baud, 8 data bits, no parity, 1 stop bit, no flow control.

If the USB Console Port is active (cable inserted and remote PC drivers are enabled) by default the console will device from RJ45 to USB when the USB cable is detected. If both ports are connected, the Mini USB console port is used.

The following table shows the pin-outs for the CON/AUX RJ-45 connector:

<table>
<thead>
<tr>
<th>Pin</th>
<th>Signal</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DTR</td>
<td>Output</td>
</tr>
<tr>
<td>2</td>
<td>3.3</td>
<td>Output</td>
</tr>
<tr>
<td>3</td>
<td>TXD</td>
<td>Output</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>RXD</td>
<td>Input</td>
</tr>
<tr>
<td>7</td>
<td>-</td>
<td>NC</td>
</tr>
<tr>
<td>8</td>
<td>-</td>
<td>NC</td>
</tr>
</tbody>
</table>

Note

The console port will not support a remote dial-in modem.
SKU Information

The following table lists the different SKUs available for the Cisco ISA 3000.

<table>
<thead>
<tr>
<th>SKU ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA-3000-4C</td>
<td>Copper SKU with 4x10/100/1000Base-T with a management port.</td>
</tr>
<tr>
<td>ISA-3000-2C2F</td>
<td>Fiber SKU with 2x1GbE SFP and 2x10/100/1000Base-T with a management port.</td>
</tr>
</tbody>
</table>

Hardware Overview

This section provides an overview of the following hardware features for the Cisco ISA3000.

- Hardware Features for the Cisco ISA 3000, page 1-21
- Reset Button, page 1-22
- Power Supply, page 1-22
- 1 GB Removable SD Flash Memory Card, page 1-22
- Alarm Ports, page 1-23

Hardware Features for the Cisco ISA 3000

The following lists the hardware platform features for the

- CPU Intel 4 Core 1.25Ghz
- 8 GB of 1333MHz DDR3 Memory
- Dedicated management-only Gigabit Ethernet port
- Mini-USB and RJ45 Console port
- +/- 12 to 48VDC Rated (9.6 to 60VDC Maximum) redundant power connectors with 24-12 AWG screw cage terminals
- Two external USB-A ports for addition of memory cards, security tokens, modems, or other USB 2.0 compliant devices
- DIN Rail mount incorporated into the chassis
- Fan-less design
- Fault relay outputs and 2 alarm inputs
- Industrial temperature SDHC card support
- Redundant power inputs
- Secure boot support
- Bypass Relay (only available on copper ports)
### Reset Button

The Reset button resets the security appliance configuration to the default configuration set by the factory. To restore the security appliance configuration to the default configuration set by the factory, use a standard size #1 paper clip with wire gauge 0.033 inch or smaller and simultaneously press the reset button while applying power to the security appliance.

When depressed the pushbutton follows these actions:

- Depressed 0 to < 3 seconds or > 15 seconds — No action is taken.
- Depressed > 3 seconds < 15 seconds — After reboot, the unit will be running the original factory default configuration.

**Note**
The new configuration will not take effect until after a reboot. The system will boot with the original factory default configuration, including ROMMON variables. Check the software guide for the operating system you are running for the ability to change these variables.

### Power Supply

The Cisco ISA 3000 comes with redundant external power connectors. The connector supports 12 - 48 VDC. The connectors are Molex 5.00mm Pitch Eurostyle™ Horizontal Plug, with Retention Screws.

The power supply does not support reverse polarity, but does have reverse polarity protection. This means if you reverse + & - connections, the system will not power on but there will be no damage.

The + terminal always has to be greater than the - terminal for the system to operate. The difference is in the system grounding scheme used.

The ISA 3000 supports 3 basic schemes:

- Isolated DC in, neither + nor - terminal is tied to chassis GND
- Positive DC in, negative (-) terminal is tied to chassis GND
- Negative DC in, positive (+) terminal is tied to chassis GND

**Note**
To ensure uninterrupted operation the redundant power connections must be connected to independently separated power sources.

### 1 GB Removable SD Flash Memory Card

The Cisco ISA 3000 has a removable SD flash memory slot (referred to as SD). This is primarily to allow easy updates, copying of logs and crash-dumps.

The device does not come with a removable SD flash memory card installed, this is an optional spare item, Cisco part number SD-IE-1GB=.

**Note**
Check the software guide for the operating system you are running for information on SD memory support.
Installing or Removing the SD Card (Optional)

Warning: Do not insert or remove the SD card while power is on; an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding. Statement 379

To install or replace the SD card, follow these steps:

**Step 1**
On the front of the device, locate the door that protects the SD card slot. Loosen the captive screw at the top of the door using a Phillips screwdriver to open the door.

- To install a card, slide it into the slot, and press it in until it clicks in place. The card is keyed so that you cannot insert it the wrong way.
- To remove the card, push it in until it releases for it to pop out. Place it in an antistatic bag to protect it from static discharge.

**Step 2**
After the card is installed, close the guard door and fasten the captive screw using a Phillips screwdriver to keep the door in place.

**Alarm Ports**

The Cisco ISA 3000 has alarm ports as shown in Figure 1-3. There are two conditions that generate an alarm:

- When dual power supply is configured, and there is a failed or missing power supply.
- When the CPU temperature is in critical condition (below -40°C or above 105°C)

When either condition is met, the alarm LED turns red, and a syslog message and SNMP trap is triggered.

**Note**
Check the software guide for the operating system you are running for information on alarm port support.

### Power Supply

The device can be configured to run dual power supplies. When set, the system expects to see both power supplies functioning properly.

**Note**
Check the software guide for the operating system you are running for information on dual power supply configuration and support.

When configured for dual power supply, and a failure occurs, the Alarm Out LED turns red. The alarm relay is also energized. A syslog message is generated:

```
Syslog: %ASA-1-735006: Power Supply Unit Redundancy Lost
```

When configured for dual power supply, and a failure recovers, the Alarm Out LED turns off. A syslog message is generated:

```
Syslog: %ASA-1-735005: Power Supply Unit Redundancy OK
```

### Temperature Sensor

The operating system monitors the CPU temperature when it is running.

If the CPU temperature is in a critical condition (below -40°C or above 105°C), the Alarm Out LED turns red.

When the CPU temperature returns to a normal condition, the Alarm Out LED turns off.

**Note**
The critical range of temperature is not configurable. It is hard coded as below -40°C or above 105°C.
Installing the Cisco ISA 3000 Industrial Security Appliance

This chapter describes the equipment and the procedures for successfully installing the Cisco ISA 3000 and contains the following sections:

- Equipment, Tools, and Connections, page 2-25
- Installing the Cisco ISA 3000, page 2-26

**Warning**

Read the installation instructions before connecting the system to the power source. Statement 1004

**Warning**

Connect the unit only to DC power source that complies with the safety extra-low voltage (SELV) requirements in IEC 60950 based safety standards. Statement 1033

**Warning**

Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Statement 1030

**Warning**

The covers are an integral part of the safety design of the product. Do not operate the unit without the covers installed. Statement 1077

**Warning**

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. Statement 1024

**Note**

When cleaning external surfaces, use a dry, non-static cloth.

**Equipment, Tools, and Connections**

This section describes the equipment, tools, and connections necessary for installing your Cisco ISA 3000. It contains the following topics:
Items Shipped with your Cisco ISA 3000

Unpack the box and verify that all items listed on the invoice were shipped with the Cisco ISA 3000. The following items are shipped with your device:
- Product Document Of Compliance (PDOC) Part Number 78-100733-01
- Alarm Connector
- Two Power Connectors

Additional Items

The following items are not shipped with the device but are required for installation:
- ESD-preventive cord and wrist strap.
- Wire crimper for chassis grounding.
- Wire for connecting the chassis to an earth ground.
- AWG 14 (2 mm²) or larger wire for NEC-compliant chassis grounding.
- Ethernet cables for connecting to the Gigabit Ethernet ports.
- Fiber optic cables and SFP transceivers for connecting to fiber LAN ports.
- Ratcheting torque flathead screwdriver that exerts up to 15 in-lb (1.69 N-m) of pressure.
- A number-2 Phillips screwdriver.

Ethernet Devices

Identify the Ethernet devices that you will connect to the device: hub, servers, and workstations or PCs. Ensure that each device has a network interface card (NIC) for connecting to Ethernet ports.

If you plan to configure the software through the console port, provide an ASCII terminal or a PC that is running terminal emulation software to connect to the console port.

Installing the Cisco ISA 3000

This section describes how to install the Cisco ISA 3000. This device can be installed on a table top or other flat horizontal surface mounted on a wall or DIN rail.
Caution

Airflow around the device must be unrestricted. To prevent the device from overheating, ensure these minimum clearances:
- Top and bottom: 1.0 inches (25 mm)
- Exposed side (not connected to the module): 1.0 inches (25 mm)
- Front: 1.0 inches (25 mm)

When installing the device, ensure you are following these guidelines:

- Temperature surrounding the unit does not exceed 140°F (60°C).

Note

When the device is installed in an industrial enclosure, the temperature within the enclosure is greater than normal room temperature outside the enclosure.

The temperature inside the enclosure cannot exceed 140°F (60°C), which is the maximum ambient enclosure temperature of the device.

- Cabling is away from sources of electrical noise, such as radios, power lines, and fluorescent lighting fixtures.
- Connect the unit only to a Class 2 DC power source.
- Contact your Cisco TAC if tighter spacings are required.

This section contains the following topics:

- Installing a DIN Rail, page 2-27
- Installing the Cisco ISA 3000 Ground Connection, page 2-30

Installing a DIN Rail

You can use either the 7.5-mm or the 15-mm thick DIN rail for the Cisco ISA 3000. Secure the DIN rail to the mounting surface approximately every 7.8 inches (200 mm) and use end-anchors appropriately.

The device ships with a spring-loaded latch on the rear panel for a mounting on a DIN rail. See Figure 2-1.

Caution

Do not stack any equipment on the device.
To attach the Cisco ISA 3000 to a DIN rail, follow these steps.

**Step 1** Position the rear panel of the device directly in front of the DIN rail, making sure that the DIN rail fits in the space between the two hooks near the top of the device and the spring-loaded latch near the bottom.

**Step 2** Holding the bottom of the device away from the DIN rail, place the two hooks (#1) on the back of the device over the top of the DIN rail.

**Step 3** Push the device toward the DIN rail to cause the spring-loaded latch (#2) at the bottom rear of the device to move down, and snap into place.

---

**Removing the Device from a DIN Rail**

To remove the device from a DIN rail, follow these steps:

**Step 1** Ensure that power is removed from the device, and disconnect all cables and connectors from the front panel of the device.

**Step 2** Insert a tool such as a flathead screwdriver in the slot at the bottom of the spring-loaded latch (#3) and use it to release the latch from the DIN rail.

**Step 3** Pull the bottom of the device away from the DIN rail, and lift the hooks off the top of the DIN rail.
Step 4 Remove the device from the DIN rail.

Mounting the ISA 3000 in a Rack

The ISA 3000 can be mounted in a 19" cabinet/rack with the optional kit part number STK-RACKMNT-2955. This kit includes a bracket and mounting screws, see Figure 2-2.

Figure 2-2 Mounting Bracket

To install the ISA 3000 in a cabinet or rack, perform the following steps:

Step 1 Install the bracket in the cabinet or rack using the 4 front screws included in the kit. Place the screws through the mounting holes (#1).

Step 2 Attach The device to the DIN rail built into the mounting bracket (#2) in the same manner as described in Installing a DIN Rail.
Installing the Cisco ISA 3000 Ground Connection

The device must be connected to a reliable earth ground. Install the ground wire in accordance with local electrical safety standards.

- For NEC-compliant grounding, use size 14 AWG (2 mm²) or larger copper wire and a ring terminal with an inner diameter of 1/4 in. (5 to 7 mm).
- The ground lug is not supplied with the device. You can use either a single ring terminal or two single ring terminals.

⚠️ Warning This equipment needs to be grounded. Use a green and yellow 14 to 16 AWG ground wire to connect the host to earth ground during normal use. Statement 242

⚠️ Warning This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. Statement 1024

⚠️ Warning When installing or replacing the unit, the ground connection must always be made first and disconnected last. Statement 1046

To install the ground connection, follow these steps:

Step 1 Use a standard Phillips screwdriver or a ratcheting torque screwdriver with a Phillips head to remove the ground screw from the front panel of the device.
Store the ground screw for later use.

Step 2 Use a wire stripping tool to strip the 14-to-16 AWG grounding wire to 0.22 in. (5.56 mm).

Step 3 Crimp the ground wire to the ring terminal using the wire crimper. See Figure 2-3.

Figure 2-3 Crimping the Ring Terminal

Step 4 Slide the ground screw through the terminal.
Step 5  Insert the ground screw into the functional ground screw opening on the front panel.

Step 6  Attach the ring terminal to the chassis using the screw set aside in step 1. Use a ratcheting torque screwdriver to tighten the ground screws and ring terminal to the device front panel to 3.5 in-lb (0.4 N-m). See Figure 2-4.

*Figure 2-4  Grounding Location*

Step 7  Connect the other end of the ground wire to a known reliable earth ground point at your site.

Step 8  Move on to the next chapter for instructions on connecting Ethernet devices and a network.
Connecting the ISA 3000

This chapter describes how to connect the Cisco ISA 3000 Industrial Security Appliance to Ethernet devices and a network. The chapter contains the following sections:

- Preparing to Connect the Cisco ISA 3000, page 3-33
- Connecting a PC to the ISA 3000 For Configuration, page 3-34
- Connecting to DC Power, page 3-35
- Verifying Connections, page 3-39
- Connecting Alarm Circuits, page 3-40

Preparing to Connect the Cisco ISA 3000

Before you connect the Cisco ISA 3000 to the devices, install the ISA 3000 according to the instructions in Chapter 2, “Installing the Cisco ISA 3000 Industrial Security Appliance”.

Caution
If this product will be installed in a hazardous location, read the Getting Started/Printed Document of Compliance included in the package.

Warning
To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables. Statement 1021

Preventing Damage to the Cisco ISA 3000

Before installation, observe these general guidelines:

- Proper ESD protection should be observed
- Ensure the device is properly grounded
- Ensure there is proper airflow around the device
Connecting a PC to the ISA 3000 For Configuration

There are two methods of connecting to the ISA 3000 and configuring the device:

- Connect a PC to the console connector of the Cisco ISA 3000 and launch a console terminal to use the CLI. ASA has a full CLI set, however, FTD only supports a setup script plus a few commands.
- Connect the PC to the Cisco ISA 3000 management sub-network which will then receive an IP address through DHCP.

Note
This section describes connecting to the console port. Refer to documentation that is provided for your operating system for connecting through the management port.

To connect a PC to the console port on the Cisco ISA 3000 and access the CLI, follow these steps:

Step 1
Choose which console connection will be used. In Figure 3-1, Item 1 is the RJ-45 console connector, and item 2 is the mini-USB connector.

Figure 3-1  Console Connection Ports

Step 2
If the mini-USB connector is being used, the protective cover will need to be removed first. The red arrow in Figure 3-2 shows the location of the cover. Remove the cover with a Phillips screw driver and set it aside to be reinstalled after completing the configuration.
Figure 3-2  mini-USB Cover

---

Step 3  Connect the mini-USB side of a cable to the USB Console port on the Cisco ISA 3000.

Step 4  Connect the opposite end of the mini-USB cable to the USB port on your PC.

Step 5  If your PC warns you that you do not have the proper drivers to communicate with the router, you can obtain them from your computers manufacturer, or go here: https://www.silabs.com/products/mcu/Pages/USBtoUARTBridgeVCPDrivers.aspx

Step 6  Start up a console terminal.

Step 7  See the initial configuration section for more details.

---

Connecting to DC Power

Disclaimer  This product relies on the building’s installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than 60 VDC minimum, 5A maximum.  Statement 1005

Warning  Installation of the equipment must comply with local and national electrical codes.  Statement 1074
Warning Before performing any of the following procedures, ensure that power is removed from the DC circuit.
Statement 1003

Warning Only trained and qualified personnel should be allowed to install, replace, or service this equipment.
Statement 1030

Warning A readily accessible two-poled disconnect device must be incorporated in the fixed wiring.
Statement 1022

You connect DC power to the device through the front panel connectors. The device has a dual-feed DC power supply; two connectors provide primary and secondary DC power (DC-A and DC-B).

Each power connector has an LED status indicator. The device power connectors are attached to the device chassis. Each power connector has screw terminals for terminating the DC power. All connectors are attached to the device front panel with the provided captive screws.

The power connector labeling is on the panel. The positive DC power connection is labeled “+”, and the return connection is labeled “–”.

The device can operate with a single power source or with dual power sources. When both power sources are operational, the device draws power from the DC source with the higher voltage. If one of the two power sources fail, the other continues to power the device.

To connect DC power to your ISA 3000, follow these steps:

Step 1 Locate the two power connectors on the device front panel labeled DC-A and DC-B.

![Figure 3-3 Power Connector](image)

Step 2 Identify the connector positive and return DC power connections.

The labels for power connectors DC-A and DC-B are on the device panel as displayed in Table 3-1.

<table>
<thead>
<tr>
<th>Label</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Positive DC power connection</td>
</tr>
<tr>
<td>–</td>
<td>Return DC power connection</td>
</tr>
</tbody>
</table>

Step 3 Measure two strands of twisted-pair copper wire long enough to connect the power converter to the DC power source. For DC connections from the power converter to the DC source, use 18 to 20 AWG (2.6mm) twisted-pair copper wire.
Step 4  Using a 18-gauge (1.02mm) wire-stripping tool, strip the ground wire and both ends of the twisted pair wires to 0.25 inch (6.3 mm) ± 0.02 inch (0.5 mm). See Figure 3-4, number 1. Do not strip more than 0.27 inch (6.8 mm) of insulation from the wires. Stripping more than the recommended amount of wire can leave exposed wire from the power and relay connector after installation.

Figure 3-4  Stripping the Power Connection Wire

Step 5  Remove the two captive screws that attach the power connector to the device, and remove the power connector. Remove both connectors if you are connecting to two power sources.

Step 6  On the power connector, insert the exposed part of the positive wire into the connection labeled “+” and the exposed part of the return wire into the connection labeled “−”. See Figure 3-5.

Figure 3-5  Inserting Wires into the Power Connector

Note  Ensure that you cannot see any wire lead. Only wire with insulation should extend from the connector.

Step 7  Use a ratcheting torque flathead screwdriver to torque the power connector captive screws (above the installed wire leads) to 2 in-lb (0.23 N-m). See Figure 3-6.

Note  Do not over-torque the power connector’s captive screws. The torque should not exceed 2 inch-lbs (0.23 N-m).
Connecting to DC Power

Figure 3-6 Torquing the Power Connector Captive Screws

Warning An exposed wire lead from a DC-input power source can conduct harmful levels of electricity. Be sure that no exposed portion of the DC-input power source wire extends from the power and relay connector. Statement 122

Step 8 Connect the other end of the positive wire to the positive terminal on the DC power source, and connect the other end of the return wire to the return terminal on the DC power source.

Note When you are testing the device, one power connection is sufficient. If you are installing the device and are using a second power source, repeat steps 4 through 8 using the second power connector.

Attaching the DC Power Connectors to the Device

To attach the power connectors to the front panel of the device, follow these steps:
Step 1
Insert one power connector into the DC-A receptacle on the device front panel, and the other into the DC-B receptacle.

Warning
Failure to securely tighten the captive screws can result in an electrical arc if the connector is accidentally removed. Statement 397

Warning
When you connect or disconnect the power and/or alarm connector with power applied, an electrical arc can occur. This could cause an explosion in hazardous area installations. Be sure that all power is removed from the device and any other circuits. Be sure that power cannot be accidentally turned on or verify that the area is nonhazardous before proceeding. Statement 1058

Step 2
Use a ratcheting torque flathead screwdriver to tighten the captive screws on the sides of the power connectors to 2 in-lb (0.23 N-m).

Step 3
When you are testing the device, one power source is sufficient. If you are installing the device and are using a second power source, repeat this procedure for the second power connector (DC-B), which installs just below the primary power connector (DC-A).

Step 4
When you are installing the device, secure the wires coming from the power connector so that they cannot be disturbed by casual contact. For example, use tie wraps to secure the wires to the rack.

Verifying Connections

To verify that all devices are properly connected to the Cisco ISA 3000, first turn on all the connected devices, then check the LEDs. To verify Cisco ISA 3000 operation, refer to the following table:

<table>
<thead>
<tr>
<th>LED</th>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>Power Status</td>
<td>Off — No power</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Normal operation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Flashing — Boot up phase and POST</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Flashing — BIOS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red — System is not functioning properly.</td>
</tr>
<tr>
<td>MGMT</td>
<td>Management Port Status</td>
<td>Off — No link (default)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Port link with no activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Flashing — Transmitting and Receiving data</td>
</tr>
<tr>
<td>DC_A</td>
<td>DC Power Status</td>
<td>Off — Power is not present</td>
</tr>
<tr>
<td>DC_B</td>
<td></td>
<td>Green Steady on — Power is present on the associated circuit. (Hardware controlled)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Steady on — Power is not present on the associated circuit, and the system is configured for dual-input power.</td>
</tr>
</tbody>
</table>
Connecting Alarm Circuits

After the device is installed, you are ready to connect the DC power and alarm connections.

Wiring the External Alarms

The device has two alarm input and one alarm output relay circuits for external alarms. The alarm input circuits are designed to sense if the alarm input is open or closed relative to the alarm input reference pin. Each alarm input can be configured as an open or closed contact. The alarm output relay circuit has a normally open and a normally closed contact.

Alarm signals are connected to the device through the six-pin alarm connector. Three connections are dedicated to the two alarm input circuits: alarm input 1, alarm input 2, and a reference ground. An alarm input and the reference ground wiring connection are required to complete a single alarm input circuit. The three remaining connections are for the alarm output circuit: a normally open output, a normally closed output, and a common signal. An alarm output and the common wiring connection are required to complete a single alarm output circuit.

The alarm connectors are on the device panel and are detailed in Table 3-2

<table>
<thead>
<tr>
<th>LED</th>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm Out</td>
<td>Alarm monitoring</td>
<td>Off — Alarm Out not configured or the system is off (Default)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Alarm Out is configured, no alarm detected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Steady on — Minor alarm detected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Flashing — Major alarm detected</td>
</tr>
<tr>
<td>Alarm In 1&amp;2</td>
<td>Alarm monitoring</td>
<td>Off — Alarm In not configured or the system is off (Default)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Alarm In is configured, no alarm detected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Steady on — Minor alarm detected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Flashing — Major alarm detected</td>
</tr>
<tr>
<td>Ethernet Ports</td>
<td>Link Status</td>
<td>Off — No link</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Link is up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Flashing — Transmitting and Receiving data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amber — Fault, check log.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Port 1&amp;2 or 3&amp;4 LEDs flashing amber together — Those two ports are in bypass mode and the system is up.</td>
</tr>
<tr>
<td>Console</td>
<td>Console connection Status</td>
<td>Off — RJ-45 is being used for console</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green — Mini USB is being used for console</td>
</tr>
<tr>
<td>BYPASS</td>
<td>Bypass Mode Indicator</td>
<td>The Ethernet LAN Ports pairs 1&amp;2 or 3&amp;4 (copper sku only) will blink amber together every 100ms (fast blink), when there is system power.</td>
</tr>
</tbody>
</table>
Connecting the ISA 3000

Chapter 3 Connecting the ISA 3000

Connecting Alarm Circuits

Warning

Explosion Hazard—Do not connect or disconnect wiring while the field-side power is on; an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or that the area is nonhazardous before proceeding. Statement 1081

Caution

The input voltage source of the alarm output relay circuit must be an isolated source and limited to less than or equal to 24 VDC, 1.0 A or 48 VDC, 0.5 A.

Table 3-2 Alarm Connector (Top to Bottom)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alarm Output Normally Open (NO) connection</td>
</tr>
<tr>
<td>2 (COM)</td>
<td>Alarm Output Common connection</td>
</tr>
<tr>
<td>3</td>
<td>Alarm Output Normally Closed (NC) connection</td>
</tr>
<tr>
<td>4 (IN2)</td>
<td>Alarm Input 2</td>
</tr>
<tr>
<td>5 (REF)</td>
<td>Alarm Input Reference Ground connection</td>
</tr>
<tr>
<td>6 (IN1)</td>
<td>Alarm Input 1</td>
</tr>
</tbody>
</table>

Note

Wire connections to the power and alarm connectors must be UL- and CSA-rated, style 1007 or 1569 twisted-pair copper appliance wiring material (AWM) wire (such as Belden part number 9318).

To wire the device to an external alarm device, follow these steps:

Step 1 Remove the captive screws that hold the alarm connector on the device, and remove the connector from the device chassis.

Step 2 Measure two strands of twisted-pair wire (18-to-20 AWG) long enough to connect to the external alarm device.

You can choose between setting up an external alarm input or output circuit.

Step 3 Use a wire stripper to remove the casing from both ends of each wire to 0.25 inch (6.3 mm) ± 0.02 inch (0.5 mm).

Do not strip more than 0.27 inch (6.8 mm) of insulation from the wires. Stripping more than the recommended amount of wire can leave exposed wire from the alarm connector after installation.

Step 4 Insert the exposed wires for the external alarm device into the connections based on an alarm input or output circuit setup.

For example, to wire an alarm input circuit, complete the IN1 and REF connections in Figure 3-7.
Step 5 Use a ratcheting torque flathead screwdriver to tighten the alarm connector captive screw (above the installed wire leads) to 2 in-lb (0.23 N-m).

Note Do not over-torque the power and alarm connectors’ captive screws. Do not exceed 2 inch-lbs (0.23 N-m) torque.

Step 6 Repeat the above steps to insert the input and output wires of one additional external alarm device into the alarm connector.

Figure 3-8 shows the completed wiring for two external alarm devices. The first alarm device circuit is wired as an alarm input circuit; the IN1 and REF connections complete the circuit. The second alarm device circuit is wired as an alarm output circuit that works on a normally open contact basis; the NO and COM connections complete the circuit.
Warning Failure to securely tighten the captive screws can result in an electrical arc if the connector is accidentally removed. Statement 397

Warning When you connect or disconnect the power and/or alarm connector with power applied, an electrical arc can occur. This could cause an explosion in hazardous area installations. Be sure that all power is removed from the device and any other circuits. Be sure that power cannot be accidentally turned on or verify that the area is nonhazardous before proceeding. Statement 1058

To attach the alarm connector to the front panel of the device:

**Step 1** Insert the alarm connector into the receptacle on the device front panel.

**Step 2** Use a ratcheting torque flathead screwdriver to tighten the captive screws on the sides of the alarm connector. Torque to 2 in-lb (0.23 N-m).
Hardware Bypass

The ISA 3000 is able to operate in bypass mode for ASA or Firepower Threat Defense. Bypass mode is defined as the copper ports are able to continue with an end to end connection, bypassing the Cisco ISA 3000 in the event of loss of power. This functionality is programmable. The Software will be responsible for turning off bypass mode once the system has booted up.

The hardware bypass feature lets traffic pass freely between the following interface pairs in the event of a power outage:

- Gigabitethernet 1/1 and 1/2
- Gigabitethernet 1/3 and 1/4

Note

The Hardware Bypass is only available on the copper ports.

You can configure the hardware bypass behavior for each pair of interfaces for the following events:

- Power down
- Power up to system operational

Power down means reloading or restarting the Cisco ISA 3000 via power cycle or a complete loss of power. This will bypass the ISA data ports if it has been configured to do so. If you configure the hardware bypass to continue after power up, all the traffic can pass from the internal port to the external port and vice versa. When power is restored, the system software will monitor the boot up progress and only disable the bypass when the system is ready (Firewall is ready to process packets).

Power up means after power is restored, the system will continue in bypass mode in the data ports according to the user configuration. All the traffic can pass from internal port to external port and vice versa until the user manually disables the bypass. An event/trap will be sent to the management system to indicate the system still continues in bypass mode after power is restored.

If you manually enable hardware bypass, the system will enable bypass mode and all Firewall/VPN or IPS function will not take effect until the user issues a command to disable the bypass. A critical event will be sent to the management system to indicate no protection will be provided by the system. The user has to consider whether bypass feature is enabled or not while configuring other features.

For configuration information, please see all of the software guides for Firepower Threat Defense and ASA here:

Port Bypass LEDs

Each port is equipped with a bi-colored (Green and Amber) LED which indicates the port status. The LED states are shown below:

<table>
<thead>
<tr>
<th>LED</th>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet Ports</td>
<td>Bypass Mode Indicator</td>
<td>Off — No link</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Steady on — Link is up</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Flashing — Transmitting and Receiving data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Amber — Fault, implies no link</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Port 1&amp;2 or 3&amp;4 LEDs flashing amber together — Those two ports are in bypass mode and the system is up.</td>
</tr>
</tbody>
</table>
Technical Specifications

This appendix provides device, port, cabling specifications, power adapters and other information for the Cisco ISA 3000 Industrial Security Appliance.

Warning

Ultimate disposal of this product should be handled according to all national laws and regulations. Statement 1040

Device Specifications

Table 5-1 lists the operational limits of the Cisco ISA 3000. Operating the device outside of the limits specified is not supported.

<table>
<thead>
<tr>
<th>Table 5-1 Cisco ISA 3000 Specifications</th>
<th>Design Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (H x W x D)</td>
<td>(height x width x depth x) are 5.13 x 4.42 x 6.31 in. (13 cm x 11.2 x 16 cm).</td>
</tr>
<tr>
<td>Weight</td>
<td>4.75 lbs</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40C to 60C (0 LFM)</td>
</tr>
<tr>
<td></td>
<td>-40C to 70C (40 LFM)</td>
</tr>
<tr>
<td></td>
<td>-34C to 75C (200 LFM)</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 95% RH, non condensing</td>
</tr>
<tr>
<td>Ingress Protection Rating</td>
<td>IP30</td>
</tr>
<tr>
<td>Standard Safety Certifications</td>
<td></td>
</tr>
<tr>
<td>EMC Emissions</td>
<td></td>
</tr>
<tr>
<td>EMC Immunity</td>
<td></td>
</tr>
<tr>
<td>Transportation/Storage Conditions</td>
<td>15K ft. altitude; -65C to 85C temperature</td>
</tr>
</tbody>
</table>
### MIB Information

MIBs supported for the device can be seen by going to the SNMP configuration guide URL:


From there you can find the network management MIBS URL:


<table>
<thead>
<tr>
<th>Description</th>
<th>Design Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock/Vibration</td>
<td>- IEC60068-2-6 and IEC60068-2-27</td>
</tr>
<tr>
<td></td>
<td>- MIL-STD-810, Method 514.4</td>
</tr>
<tr>
<td></td>
<td>- Marine EN60945</td>
</tr>
<tr>
<td></td>
<td>- Industrial EN61131-2/IEC61131-2</td>
</tr>
<tr>
<td></td>
<td>- Railway EN50155</td>
</tr>
<tr>
<td></td>
<td>- Smart Grid EN61850-3</td>
</tr>
<tr>
<td></td>
<td>- IEEE 1613</td>
</tr>
<tr>
<td>DC input voltage</td>
<td>- Maximum operating range: 9.6 to 60 VDC</td>
</tr>
<tr>
<td></td>
<td>- Rated: +/- 12 to 48 VDC</td>
</tr>
<tr>
<td><strong>Note</strong></td>
<td>- The DC-input power supply is an SELV circuit, and it can only be connected to another SELV circuit.</td>
</tr>
<tr>
<td>Maximum DC input current</td>
<td>- 0.5A @ 48VDC</td>
</tr>
<tr>
<td></td>
<td>- 1.0A @ 24VDC</td>
</tr>
<tr>
<td></td>
<td>- 2.0A @ 12VDC</td>
</tr>
<tr>
<td>Power consumption</td>
<td>24 Watts</td>
</tr>
</tbody>
</table>