

# **SIEMENS**

## **SiPass integrated**

## **AC5100**

## **Installation manual**

Liefermöglichkeiten und technische Änderungen vorbehalten.  
Data and design subject to change without notice. Supply subject to availability.  
© 2005 Copyright by  
Siemens Building Technologies AG

Wir behalten uns alle Rechte an diesem Dokument und an dem in ihm dargestellten Gegenstand vor. Der Empfänger anerkennt diese Rechte und wird dieses Dokument nicht ohne unsere vorgängige schriftliche Ermächtigung ganz oder teilweise Dritten zugänglich machen oder außerhalb des Zweckes verwenden, zu dem es ihm übergeben worden ist.

We reserve all rights in this document and in the subject thereof. By acceptance of the document the recipient acknowledges these rights and undertakes not to publish the document nor the subject thereof in full or in part, nor to make them available to any third party without our prior express written authorization, nor to use it for any purpose other than for which it was delivered to him.

# Content

|          |  |          |
|----------|--|----------|
| <b>1</b> | <b>Advanced Central Controller (ACC) .....</b> | <b>5</b> |
| 1.1      | Product Description.....                       | 5        |
| 1.2      | Product Number .....                           | 5        |
| 1.3      | Prerequisites .....                            | 5        |
| 1.4      | Required Tools & Material .....                | 6        |
| 1.5      | Expected Installation Time.....                | 6        |
| 1.6      | Mounting Instructions.....                     | 6        |
| 1.7      | RTC Battery Installation .....                 | 7        |
| 1.8      | Firmware Download .....                        | 7        |
| 1.9      | Wiring .....                                   | 8        |
| 1.10     | Port Descriptions.....                         | 10       |
| 1.11     | Supported Card Formats .....                   | 11       |
| 1.12     | LEDs .....                                     | 12       |
| 1.13     | Recommended Cable Specifications .....         | 13       |
| 1.14     | Programming Commands .....                     | 14       |



# 1 Advanced Central Controller (ACC)

---

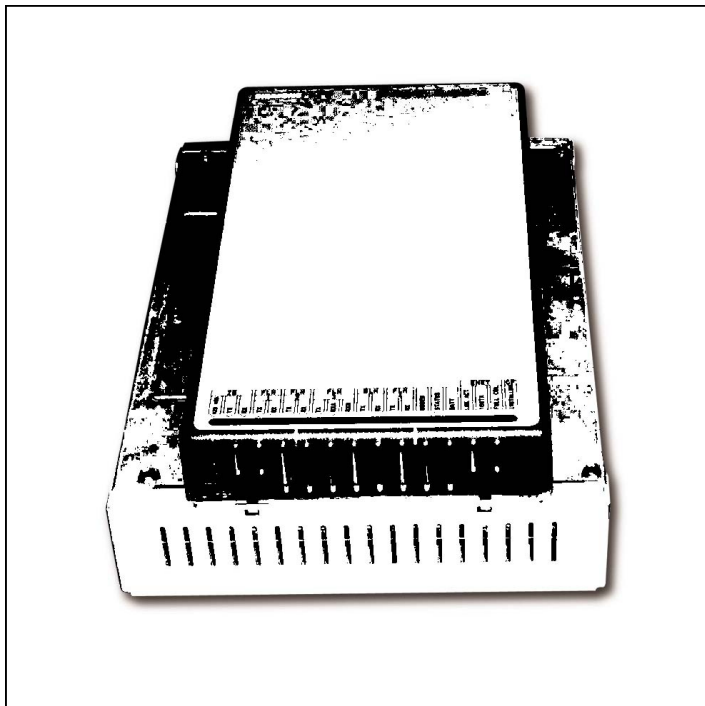


Fig. 1 Advanced Central Controller (ACC)

## 1.1 Product Description

---

The ACC is a high performance access control and security field panel. The ACC is installed as the main hardware component of a Siemens integrated access control and security solution.

The ACC is capable of hosting multiple access control and security applications from a single panel, including access management for up to 64 doors.

The ACC processes all events locally, independent of the host system. This ensures system integrity even in the unlikely event of communications failure. It also allows for quicker transaction time, since the controller does not have to wait for an access decision from the host system.

## 1.2 Product Number

---

6FL7820-8BA10 ACC-010 – 50 MHz, 24 V DC, controller in metal casing

## 1.3 Prerequisites

---

- Devices to be connected to the ACC
- Cabling (RS485 / RS422 / RS232 / Power)

## 1.4 Required Tools & Material

---

- Medium-duty drill and associated drill-bits (if required)
- 4 Mounting screws or standoffs (approx. 4 mm diameter)
- Flat-blade terminal screwdriver
- Wire cutters
- Cable strippers
- ¼ inch (0.635 mm) hex socket driver

## 1.5 Expected Installation Time

---

45 minutes + additional time for each local device installed on an FLN channel.

## 1.6 Mounting Instructions

---

1. Remove the ACC from its carton and discard the packaging material.
2. Place the ACC against the surface to which it is to be affixed and mark the location of the mounting holes.  
If being mounted within a cabinet, simply align the ACC mounting lugs with the holes located on the cabinet backplane and proceed to step 4.



---

**WARNING**

Do not apply power to the ACC or associated components at this stage.

---

3. Select the appropriate drill bit according to the mounting surface / hole size and drill the holes in the locations marked (if required).
4. Fasten the ACC to the surface using the correct type of screws or standoffs for the surface in the 4 locations provided.
5. Download the firmware instruction set (as described in the section titled “Firmware Download”).
6. Connect the cabling to the ACC (as described in the section titled “Wiring”).
7. Apply power to the ACC and test its operation. This step will require programming of the host software.

## 1.7 RTC Battery Installation

---

Please note that the real-time clock battery holder is located on the PCB.

1. Ensure that power has not been applied to the ACC.
2. Ensure that you are wearing a grounding strap before commencing with this procedure.
3. Remove the ACC perspex cover by releasing 2 of the 4 holding catches and lifting it upwards.
4. Remove the two retaining screws on the cover-plate and remove the cover-plate to expose the PCB.
5. Remove the battery from its packaging (shipped with the ACC), taking care not to touch its surface.
6. Locate the battery holder on the PCB and carefully lift the retaining clip upward.
7. Install the battery, ensuring that the polarity is correct (active/positive side facing upward).
8. Carefully release the retaining clip and check that the battery is securely in position.
9. Replace the cover-plate and 2 retaining screws.
10. Replace the Perspex cover, ensuring that the 4 holding catches are correctly locked in place.

## 1.8 Firmware Download

---

1. Start the Windows “HyperTerminal” software on a Windows PC with a serial port or Ethernet port.
2. Configure HyperTerminal for connection to the ACC.
3. Connect an RS232 or CAT-5 Ethernet cable between the PC hosting HyperTerminal and the **DIAG** or **10/100** port on the ACC respectively.
4. Connect a power supply to the ACC as described in step 8 of the “Wiring” procedure.
5. Ensure the power for the ACC is connected.
6. Log into the ACC via Telnet using:  
**IP Address:** 192.168.1.250  
**User Name:** SIEMENS  
**Password:** spirit
7. Using the HyperTerminal program, set the following parameters for the ACC:
  - Name
  - Host (SiPass Server) IP Address
  - IP address
  - Subnet mask
  - Gateway addressA table of commands is included at the end of this Installation Sheet.

8. Restart the ACC for the networking changes to take effect or use the “reboot” command.
9. Connect an Ethernet cable to the ACC as described in step 1 of the “Wiring” procedure.
10. From the Windows Command Prompt dialog (Select Start > Run > cmd) download the firmware to the ACC using the following command from the firmware directory:  
D:\firmware>tftp -i xxx.xxx.xxx.xxx put [filename] image

where: xxx.xxx.xxx.xxx = the ACC’s IP address  
[filename] = the filename of the firmware



Alternatively, the “Xmodem” command can be used within the HyperTerminal window to activate a file transfer. Once activated, **Send File** can be selected from the **Transfer** menu. This will display a file transfer dialog where you can select the **1KXmodem** protocol option from the drop-down list and specify the firmware file for download. Then simply press the **Send** button to begin downloading. Refer to the ACC Installation and User’s Guide for more information.

---

Once download is complete, boot the ACC using the “boot” command in the HyperTerminal window.

## 1.9 Wiring

---

1. Connect an Ethernet cable (from the same network as the host system) to the **10/100** port on the ACC.
2. Connect the local devices (DRI, SRI, IPM und OPM) to each of the 4 FLN ports on the ACC. Ensure that the polarity of each connection is correct.



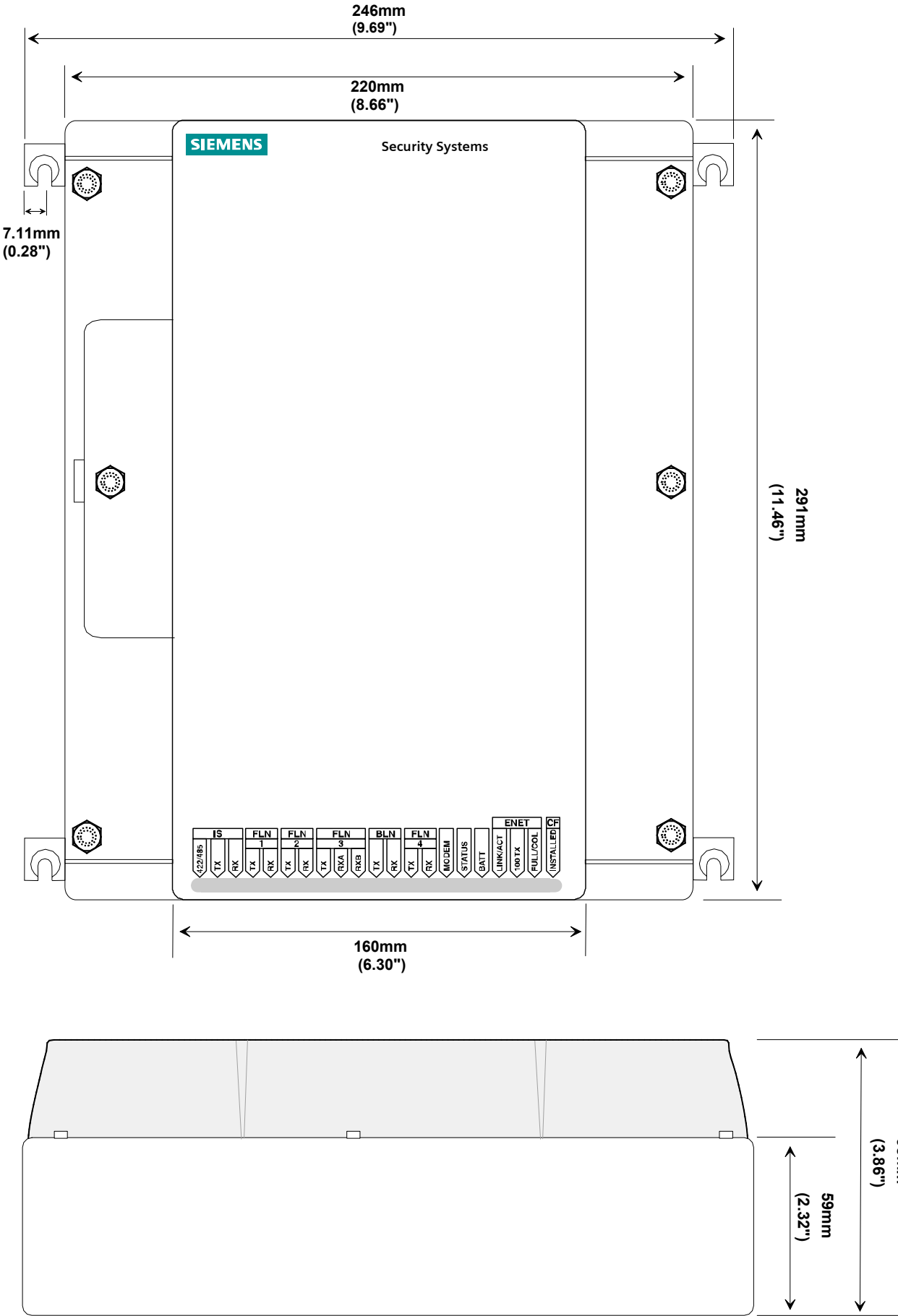
Up to 16 devices can be connected to each FLN port, for a total of 64 devices per ACC.

---

3. Ensure that the cable shield for each FLN channel is continuous and grounded at one end only. It is recommended to ground the end closest to the ACC.
4. Connect the integrated service (if required) to the **ISa** and/or **ISb** ports on the ACC. Depending upon the application to which the ACC is connected this may be an RS485, RS422, or RS232 connection.
5. Connect a backup battery (if required) to the **BAT BACKUP** port on the ACC.
6. Connect an alarm device (if required) to the **ALARM OUT** port on the ACC.
7. Connect a tamper switch (if required) to the **TAMPER** port on the ACC.
8. Connect the active and neutral wires from a Power Supply Unit (PSU) to the **24V DC port** on the ACC. Ensure that the polarity of this connection is made correctly.
9. Ensure that the ACC is correctly grounded, by connecting a wire from an approved building earth ground to the **24 V DC port**.
10. Check all connections thoroughly.

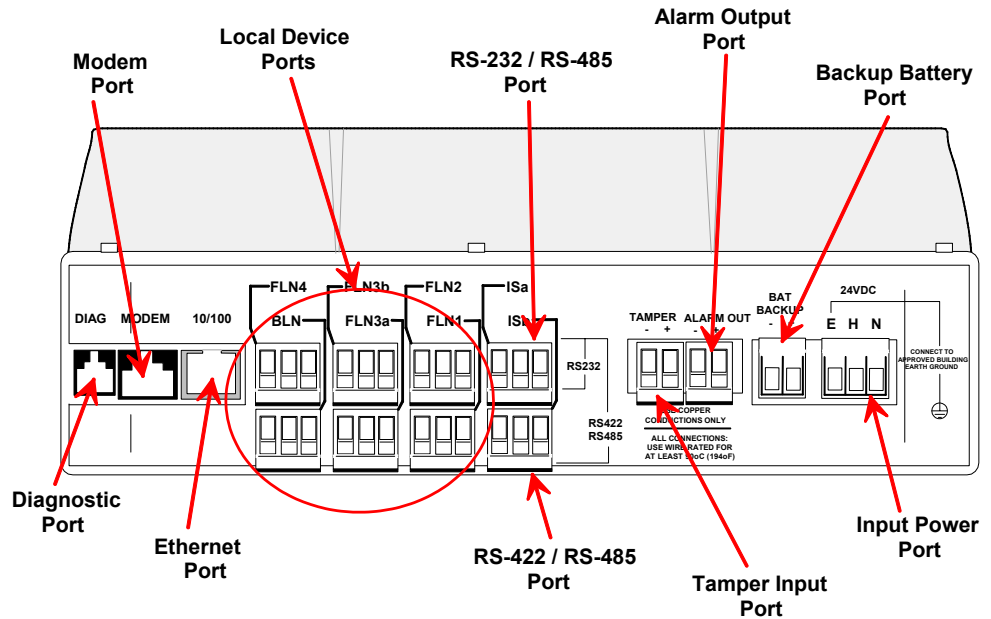


The following diagram displays the layout and dimensions of the ACC.



## 1.10 Port Descriptions

The following diagram displays the location of the ports on the ACC:



The following table provides a brief description of each port:

| Port Name  | Brief Description   |
|------------|---|
| DIAG       | Diagnostic port for firmware download (Local RS232 port – no flow control).   |
| MODEM      | RJ-45 port for dialup communications with the host system.  |
| 10/100     | Ethernet port for communications with the host system via WAN / LAN.  |
| FLN4       | Local RS485 communications port number 4 for connection of up to 16 local devices (SRI/DRI/IPM/OPM).  |
| BLN        | Not Enabled – included for future enhancement of the ACC.   |
| FLN3b      | Local RS485 communications port number 3 for connection of up to 16 local devices (SRI/DRI/IPM/OPM).  |
| FLN3a      | Local RS485 communications port number 3 for connection of up to 16 local devices (SRI/DRI/IPM/OPM).<br>Please note that FLN3 is split into two identical ports allowing the same signal to be split in 2 directions. |
| FLN2       | Local RS485 communications port number 2 for connection of up to 16 local devices (SRI/DRI/IPM/OPM).  |
| FLN1       | Local RS485 communications port number 1 for connection of up to 16 local devices (SRI/DRI/IPM/OPM).  |
| ISa        | RS232 / RS422 / RS485 general-purpose port for communications with third party applications.  |
| ISb        | RS422 / RS485 general-purpose port for communications with third party applications.  |
| ALARM OUT  | Open collector alarm output used to connect an alarm output device such as a siren / buzzer / strobe light.   |
| TAMPER     | Input for the connection of a tamper switch, used to monitor the status of the cabinet door.  |
| BAT BACKUP | Connection for a backup battery. The battery can be continuously recharged. Includes deep discharge protection. (24VDC)   |
| 24V DC     | Power input connection for a 24V DC power source.   |

## 1.11 Supported Card Formats

The following table outlines the supported card formats for the ACC:

| Card Technology    | Format                   |
|--------------------|--------------------------|
| Bar Code           | 2 of 5                   |
|                    | 3 of 9                   |
|                    | Encrypted                |
|                    | Facility                 |
| Magstripe          | Credit                   |
|                    | Encrypted                |
|                    | Facility                 |
|                    | CerPass                  |
|                    | SiPass                   |
| HID Proximity      | 26-bit                   |
|                    | 36-bit Asco              |
|                    | Corporate 1000           |
|                    | Siemens STG (*)          |
|                    | Siemens 52-bit encrypted |
| Indala Proximity   | 27 bit                   |
| Cotag Proximity    | 27 bit                   |
| MIFARE             | CSN32                    |
|                    | CSN40                    |
|                    | Sector – Siemens 52-bit  |
| MIFARE Smart       | Siemens                  |
| Asset ID Proximity | IBMAssetID1              |
| 125Khz Proximity   | CerPass                  |
| Miro               | CerPass                  |
| Hitag1             | Cerpass                  |
| Hitag2             | CerPass                  |
| Legic              | CerPass                  |

(\*) For use in UL installations

## 1.12 LEDs

The following table describes the operation of the LEDs located on the ACC:

| LED          | Brief Description   |
|--------------|---|
| <b>IS</b>    |   |
| 422/485      | When the LED is ON, the "ISa" port will be configured to operate in RS422 / RS485 mode.<br>When the LED is OFF, the "Isa" port is configured to operate in RS232 mode.  |
| TX           | When the LED is flashing, the ACC is transmitting data on the ISa / ISb ports.  |
| RX           | When flashing, the ACC is receiving data on the ISa / ISb ports.  |
| <b>FLN 1</b> |   |
| TX           | When the LED is flashing, the ACC is transmitting data on the FLN1 port.  |
| RX           | When the LED is flashing, the ACC is receiving data on the FLN1 port.   |
| <b>FLN2</b>  |   |
| TX           | When the LED is flashing, the ACC is transmitting data on the FLN2 port.  |
| RX           | When the LED is flashing, the ACC is receiving data on the FLN2 port.   |
| <b>FLN3</b>  |   |
| TX           | When the LED is flashing, the ACC is transmitting data on the FLN3 ports.   |
| RXA / RXB    | When the LED is flashing, the ACC is receiving data on the FLN3a FLN3b ports respectively.  |
| <b>BLN</b>   |   |
| TX           | Not currently enabled – included for future enhancement of the ACC.   |
| RX           | Not currently enabled – included for future enhancement of the ACC.   |
| <b>FLN4</b>  |   |
| TX           | When the LED is flashing, the ACC is transmitting data on the FLN4 port.  |
| RX           | When the LED is flashing, the ACC is receiving data on the FLN4 port.   |
| MODEM        | When the LED is flashing, data is being sent over the dialup communications channel.  |
| STATUS       | When flashing 4 times per second, the operating system is loaded and running. No firmware has been downloaded at this stage.<br>When flashing once per second, the firmware has been downloaded and the ACC is "Alive".<br>When the LED is not flashing the ACC has no power or is not functioning correctly. |
| BATT         | When the LED is ON, a backup battery has not been connected.<br>When the LED is OFF, the backup battery is connected.   |
| <b>ENET</b>  |   |
| LINK/ACT     | When the LED is ON, the Ethernet cable has been physically connected to the 10/100 port. When flashing, incoming or outgoing messages (activity) are present.   |
| 100TX        | When the LED is ON, the Ethernet 10/100 port is operating at 100MB.<br>When the LED is OFF the Ethernet 10/100 port is operating at 10MB.   |
| FULL/COL     | When the LED ON, Ethernet communications is full-duplex. When flashing, a collision has been detected.  |
| <b>CF</b>    |   |
| INSTALLED    | When the LED is ON, the compact flash card has been installed.  |

## 1.13 Recommended Cable Specifications

The following table outlines the cable recommended for connection of an integrated security system:

| Communication Type | Recommended Cable Specifications |       |     |           |               |              |  |        |
|--------------------|----------------------------------|-------|-----|-----------|---------------|--------------|--|--------|
|                    | Core                             | Pairs | AWG | Stranding | Wire Type     | Insulation   | Shield   | Jacket |
| RS485              | 4                                | 2     | 28  | 7 x 36    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / braided shield | PVC    |
|                    | 6                                | 3     | 28  | 7 x 36    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / braided shield | PVC    |
|                    | 8                                | 4     | 28  | 7 x 36    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / braided shield | PVC    |
| RS232              | 4                                | 2     | 24  | 7 x 32    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / no braid       | PVC    |
|                    | 6                                | 3     | 24  | 7 x 32    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / no braid       | PVC    |
|                    | 8                                | 4     | 24  | 7 x 32    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / no braid       | PVC    |
| RS422              | 4                                | 2     | 24  | 7 x 32    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / no braid       | PVC    |
|                    | 6                                | 3     | 24  | 7 x 32    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / no braid       | PVC    |
|                    | 8                                | 4     | 24  | 7 x 32    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / no braid       | PVC    |
| RJ-45              | 8                                | 4     | 24  | Solid     | Bare Copper   | Polyethylene | Unshielded                                     | PVC    |
|                    | 8                                | 4     | 24  | 7 x 32    | Tinned Copper | Polyethylene | Unshielded                                     | PVC    |
| RJ-12              | 8                                | 4     | 24  | Solid     | Bare Copper   | Polyethylene | Aluminum foil- Polyester tape / no braid       | PVC    |
|                    | 8                                | 4     | 24  | 7 x 32    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / no braid       | PVC    |
| Wiegand / Reader   | 6                                | 3     | 28  | 7 x 36    | Tinned Copper | Polyethylene | Aluminum foil- Polyester tape / braided shield | PVC    |
| Power (24 V DC)    | 2                                | 1     | 18  | 19 x 30   | Tinned Copper | Polyethylene | Unshielded                                     | PVC    |



The above table provides a guideline for selecting an appropriate cable type only. Other cable types are also compatible with the system and can be used to achieve the same results.

## 1.14 Programming Commands

The following table outlines the main commands used to configure the ACC using the HyperTerminal software.

| Command        | Description   |
|----------------|---|
| set accname x  | Allows the name of the ACC to be configured, for example "Main Foyer".  |
| set hostip x   | Allows the IP address of the PC with the SiPass host software installed to be configured.                                     |
| set baudrate x | Allows the baud rate of the RS232 communications between the ACC and the PC hosting the HyperTerminal software to be changed. |
| set defaults   | Allows the standard ACC defaults to be applied.   |
| set gateway x  | Allows the IP address of the gateway to be configured.  |
| set ip x       | Allows the IP address of the ACC to be configured (0.0.00 to 254.254.254.254).  |
| set port x     | Allows the communications port to be configured (1 to 65,000).  |
| set subnet x   | Allows the to be configured of the subnet mask.   |
| get status     | Displays the settings configured for the ACC.   |



An "x" in the above table represents the data to be entered, for example an IP address or a name.

The following displays a typical entry of a command into the HyperTerminal window:

```
set accname foyer
```

Where "foyer" is the name of the ACC being configured.



In some instances, the HyperTerminal software may not be communicating with the ACC. This is represented by a triple prompt ">>>". Simply press the "B" key on your keyboard once to re-activate communications with the ACC.



Information in this document is based on specifications believed correct at the time of publication. The right is reserved to make changes as design improvements are made.



Issued by  
Siemens Building Technologies  
Fire & Security Products GmbH & Co. oHG  
D-76181 Karlsruhe

[www.sbt.siemens.com](http://www.sbt.siemens.com)

© 2005 Copyright by  
Siemens Building Technologies AG  
Data and design subject to change without notice.  
Supply subject to availability.

Printed in the Federal Republic of Germany  
on environment-friendly chlorine-free paper.

---

Document no. **A24205-A335-B243**  
Edition 02.2005