



# **Personas 86**

## Automated Teller Machine Site Preparation

B006-6191-A000  
0700

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## NOTICE

This is a contractual document. It contains important warning and confers important legal rights and obligations. You are advised to read it carefully.

It is the responsibility of the customer to assure that all installation preparations are complete and in compliance with all specifications and requirements of NCR and all applicable national, state, or local codes, regulations and laws.

The product described in this book is a licensed product of NCR Corporation.

Personas is a trademark of NCR Corporation.

It is the policy of NCR Corporation (NCR) to improve products as new technology, components, software, and firmware become available. NCR, therefore, reserves the right to change specifications without prior notice.

All features, functions, and operations described herein may not be marketed by NCR in all parts of the world. In some instances, photographs are of equipment prototypes. Therefore, before using this document, consult with your NCR representative or NCR office for information that is applicable and current.

To maintain the quality of our publications, we need your comments on the accuracy, clarity, organization, and value of this book.

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# Federal Communications Commission (FCC) Radio Frequency Interference Statement

**Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.**

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## Canadian Class A Device Declaration

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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## Information to User

This equipment must be installed and used in strict accordance with the manufacturer's instructions. However, there is no guarantee that interference to radio communications will not occur in a particular commercial installation. If this equipment does cause interference, which can be determined by turning the equipment off and on, the user is encouraged to consult an NCR service representative immediately.

**Caution** NCR Corporation is not responsible for any radio or television interference caused by unauthorised modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by NCR. Such unauthorized modifications, substitutions, or attachments may void the user's authority to operate the equipment. The correction of interference caused by such unauthorized modifications, substitutions, or attachments will be the responsibility of the user.

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# Revision Record

Date	Page	Description of Change
July 00	All	New Publication for Personnas 86



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# Preface

This document contains the information necessary for the preparation of a site conforming to NCR specifications. It is very important that the site complies with the requirements specified in this document because, once the equipment has been installed, deficiencies in site preparation or the problems caused by these deficiencies are much more difficult to detect and correct. Further, failure to comply with these requirements or to take proper steps to protect equipment against risks identified in this document may cause serious damage to the equipment and to the customer's business.

In addition to the need to comply with the requirements specified, electrical wiring and mechanical systems must also comply with all relevant codes, laws and regulations.

It is important that the site be prepared by a customer or his agent who is fully conversant with the special requirements of electronic equipment. The responsibility for ensuring that the site is prepared in compliance with this document remains with the customer.

For information and guidance only, a list is provided, in general terms, of those matters for which the customer is responsible. This list is not intended to be comprehensive, and in no way modifies, alters, or limits the responsibility of the customer for all aspects of adequate site preparation.

NCR staff will be available to answer questions relating to the contents of this document but, except where:

- a** the customer has been notified that a full or partial consultancy service is available and/or that NCR will be willing to undertake a preliminary or final site survey and
- b** the customer shall have entered into a formal contract with NCR for provision of the same.

No comment, suggestion or advice offered or not offered about preparation of the site nor any inspection of the site whether before or after preparation is to be taken as approval of the location of the site and equipment or of its preparation and NCR will not be liable in respect of any comment, suggestion or advice given by its staff or in respect of any failure to give advice.

Finally, only the customer can know the full extent of damage which may be caused to his business by reason of failure of the equipment which is to be installed. For this reason it is the customer's responsibility to ascertain the extent of any such possible damage to his existing or planned business, and to effect full insurance in respect of it.

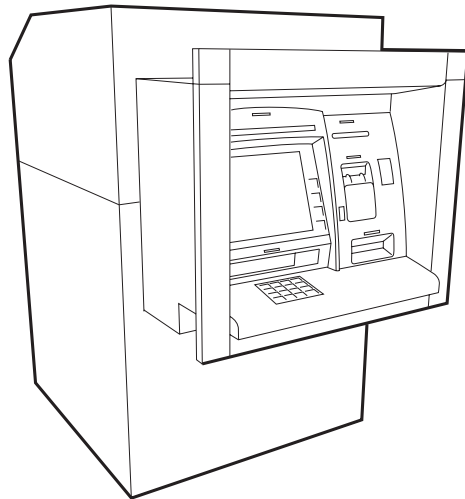
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## Overview

The NCR Personas 86 Automated Teller Machine (ATM) is a self-service terminal which may be installed through any suitable exterior wall or vestibule location.

The ATM is designed to enable customers of owning institutions to activate the ATM and avail themselves of a range of services such as:

- Cash withdrawals
- Statement printing
- Passbook updating (vestibule installations only)
- Cheque book requests
- Account enquiries
- Transfers
- Envelope deposits
- Envelope dispensing.



## Customer Responsibilities


The customer must do or provide the following:

- When required by NCR, provide the NCR customer service representative with appropriate drawings that indicate:
  - Location of the equipment
  - Site wiring (power and signal, paths and lengths)
  - Location of other equipment capable of generating electrical noise, electromagnetic interference, heat, etc.
- Make building alterations necessary to meet wiring and other site requirements.
- Provide and install all communications cables, wall jacks, special connectors, and associated hardware.
- Provide and install necessary power distribution boxes, conduits, grounds, lightning protection, and associated hardware.
- Make sure all applicable codes, regulations and laws (including, but not limited to, electrical, building, safety, and health) are met.
- Provide and install auxiliary power or other equipment as required.
- Provide storage or service areas as required.
- Make sure the environmental requirements of the system/unit are met.
- Provide floor coverings and environmental systems that limit or control static electricity build-up and discharge.
- Install the product at a height which meets the accessibility regulations of the relevant country.



## Product Identification

The product is identified by a class type number, 5886, and a 4 digit model number which is printed on a label fixed inside the top cabinet of the ATM and above the receipt printer. The first two digits of the model number identify the major model (normally 01), the next two digits identify the minor model (normally 01).

 NCR Financial Systems Ltd. Dundee Scotland  Made in UK	<b>Class: 5886</b>	<b>Model: XXXX</b>	
	<b>Serial: XX-XXXXXXXX</b>		
	<b>Tracer: XX-XXXXX</b>		
	<b>Vac: 220 - 240</b>	<b>Hz: 50/60</b>	<b>A:6.3</b>

**CE**

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**Electromagnetic Compatibility**  
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 received, including interference that may cause undesired operation.

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This apparatus does not exceed Class A limits for radio noise emissions set out in the Radio Interference Regulations of Canada.  
Le present appareil n'emmet pas de bruits radioelectriques depassant les limites de la classe A prescrites dans le Reglement sur le brouillage radioelectrique du Canada.

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"Complies with FDA Radiation Performance Standards, 21 CFR Subchapter J"



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Chapter 1

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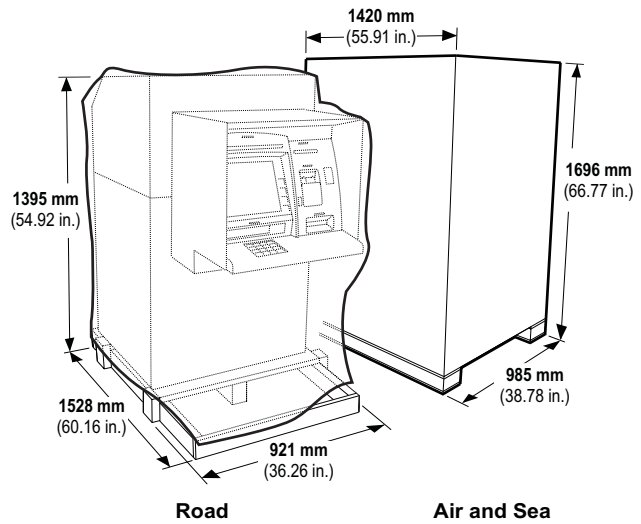
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**Physical Requirements**

# Package Dimensions

The type of packaging used on your ATM depends on whether it is being shipped by road or by air/sea freight. Both types of packaging are shown below.



## Manoeuvring the ATM into Position

Ensure that doorways and corridors leading to your point of installation are wide enough to allow the package to pass through, or make arrangements to unpack the ATM in an area with sufficient access and then move it to the installation site. Also ensure that any corridors can support the weight of the ATM.

The following table shows the **minimum** dimensions for doorways, corridors with right angle corners and the space required to rotate an ATM on its axis.

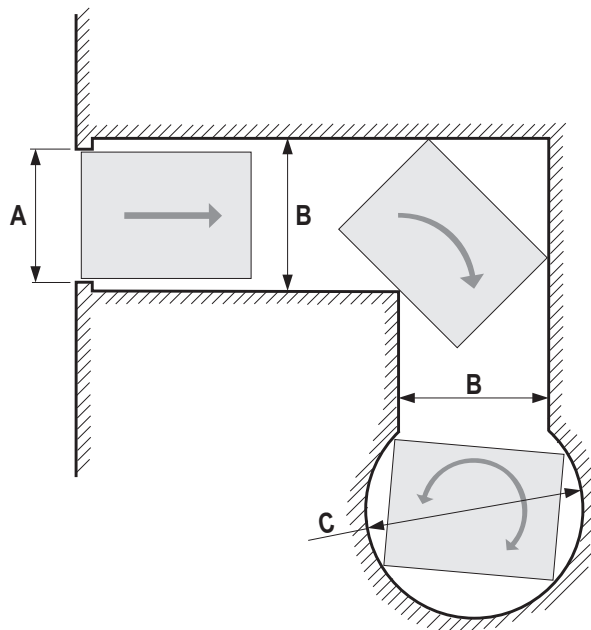
**Note 1:** The dimensions assume the ATM is being moved using equipment that does **not** extend beyond the base of the ATM or packaging.

**Note 2:** A surrounding clearance of **6 mm** (0.25 in.) has been allowed in the figures.

**Note 3:** The dimensions for an unpackaged ATM include side panels.



	Unpackaged ATM	Road Packaging	Air/Sea Packaging
<b>A</b> Doorway or straight corridor	<b>831 mm</b> (32.72 in.)	<b>933 mm</b> (36.73 in.)	<b>997 mm</b> (39.25 in.)
<b>B</b> Corridor with corner	<b>1042 mm</b> (41.01 in.)	<b>1203 mm</b> (47.38 in.)	<b>1211 mm</b> (47.66 in.)
<b>C</b> Rotation about centre	<b>1527 mm</b> (60.12 in.)	<b>1796 mm</b> (70.71 in.)	<b>1740 mm</b> (68.51 in.)



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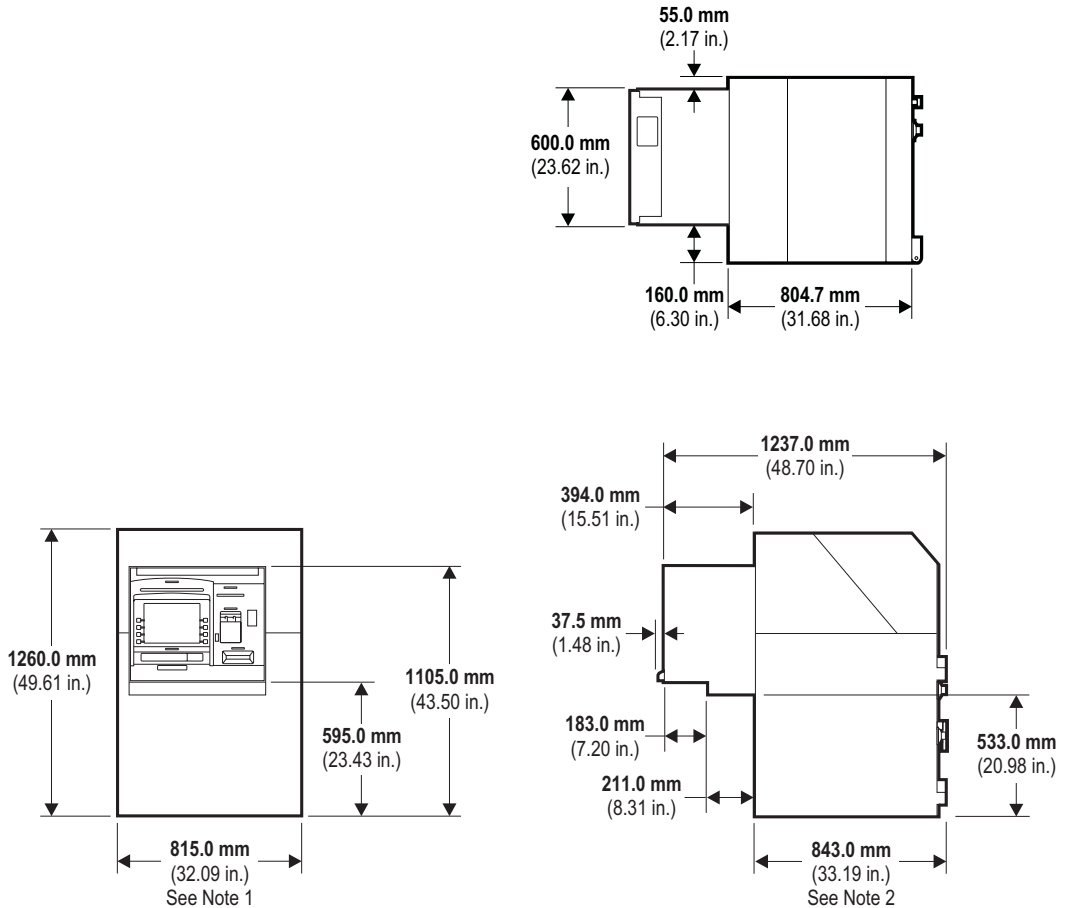
## ATM Dimensions

The following illustrations show dimensions for ATM's configured with CEN Grade III, Spanish Special Security, UL and CEN Grade IV enclosures.

**Note:** Cables enter the ATM through the hole in the base of the ATM security enclosure. The location of the hole is shown in the illustration "Support Plinth" (see page 1-39).

**Before Collar has  
 been Fitted**

The dimensions in the illustration below show the ATM before a collar has been fitted.

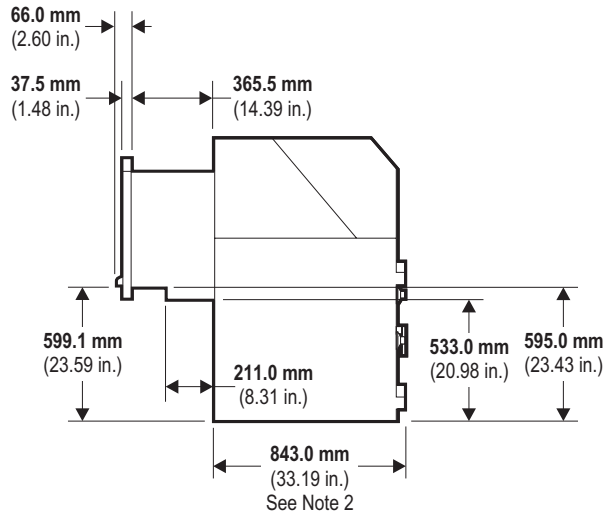
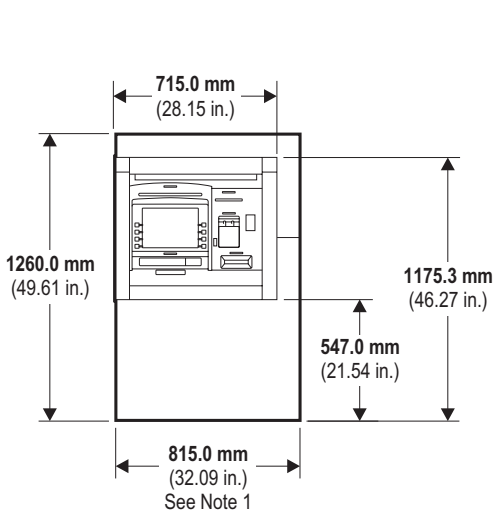
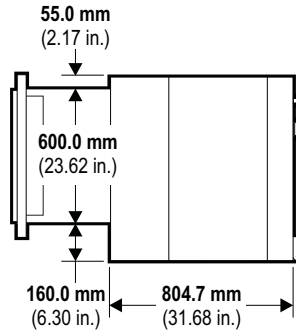


**Note 1:** If side panels are fitted, the width of the ATM is **819 mm (32.24 in.)**.

**Note 2:** If customised panels are fitted to the front and back of the security enclosure, the depth of the enclosure is **845 mm (33.27 in.)**.

## Standard Collar

The dimensions in the illustration below show the ATM with a standard collar fitted.

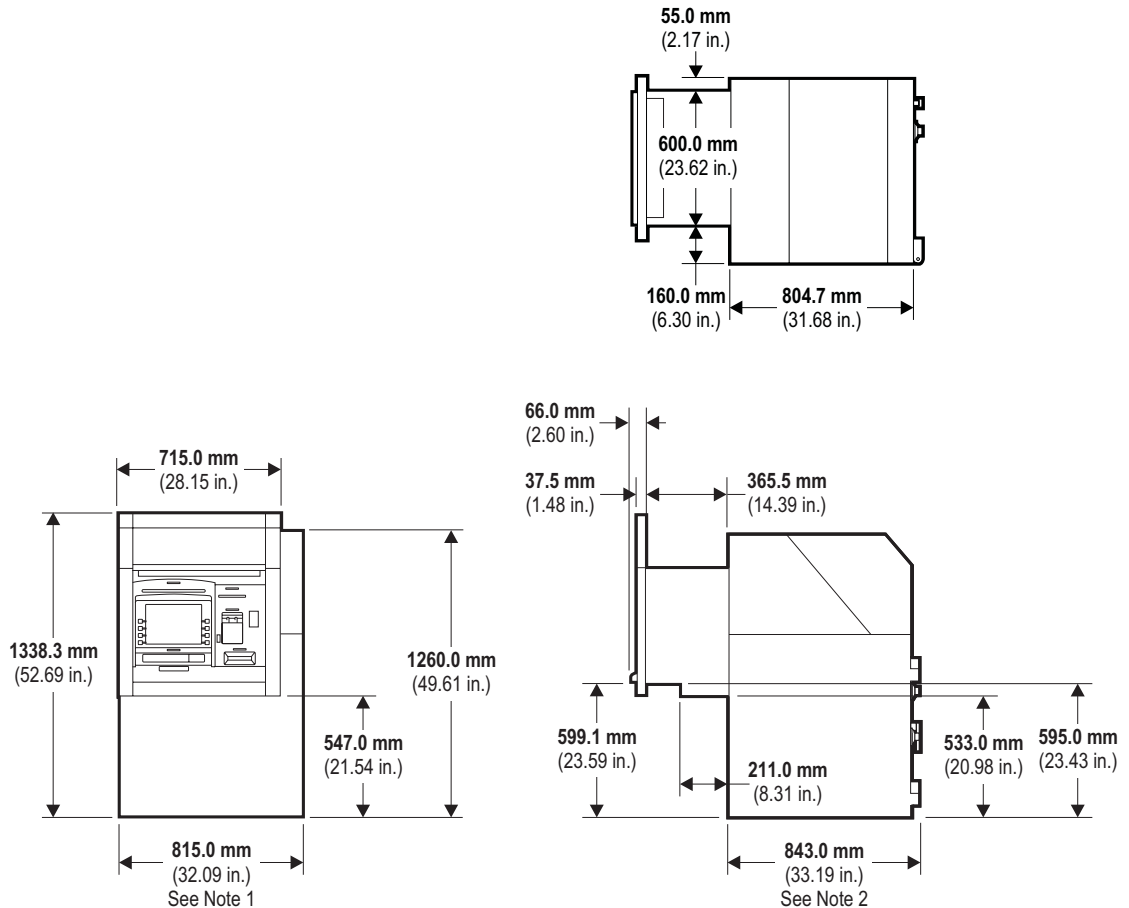


**Note 1:** If side panels are fitted, the width of the ATM is **819 mm (32.24 in.)**.

**Note 2:** If customised panels are fitted to the front and back of the security enclosure, the depth of the enclosure is **845 mm (33.27 in.)**.

## Standard Collar With Advert Light

The dimensions in the illustration below show the ATM with a standard advert light fitted.



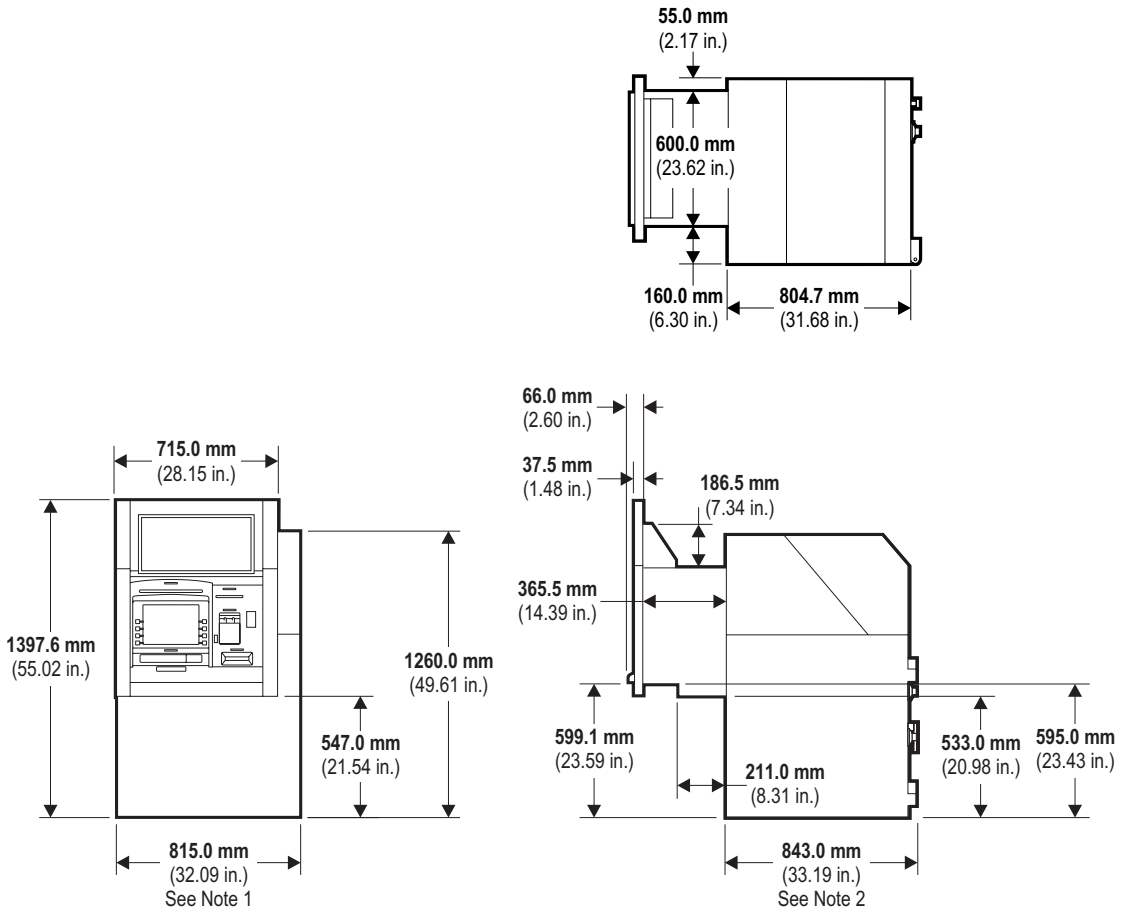
**Note 1:** If side panels are fitted, the width of the ATM is **819 mm (32.24 in.)**.

**Note 2:** If customised panels are fitted to the front and back of the security enclosure, the depth of the enclosure is **845 mm (33.27 in.)**.

## Lowered Height Collar

The dimensions in the illustration below show the ATM with a collar for lowered installations fitted.

**Note:** For a definition of “Lowered Height” refer to page 1-23.













**Note 1:** If side panels are fitted the width of the ATM is **819 mm (32.24 in.)**.

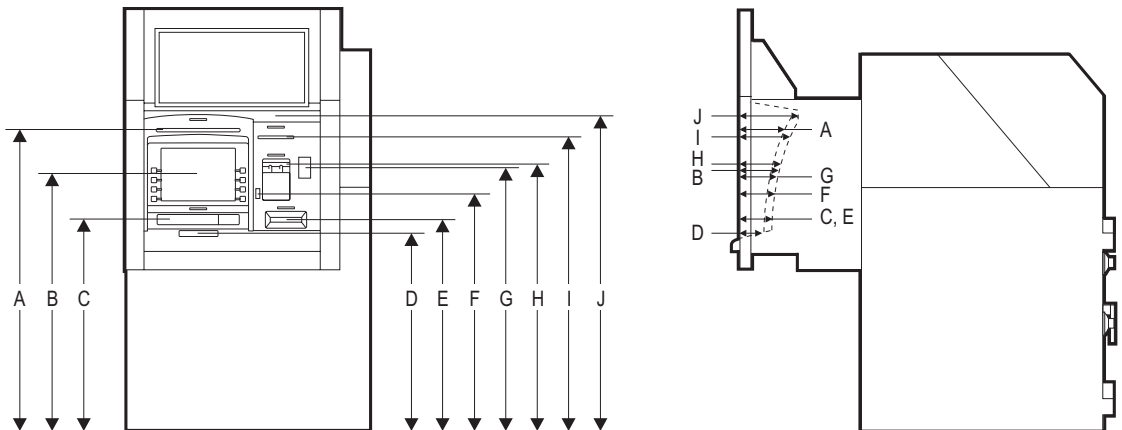
**Note 2:** If customised panels are fitted to the front and back of the security enclosure, the depth of the enclosure is **845 mm (33.27 in.)**.

## Heights to Main Facia Items

The following illustration shows the heights to the main facia items, located on the Personas 86 facia. All the height dimensions are calculated from the base of the ATM, after the transportation feet have been removed.

The height from **sidewalk level** to each facia item will vary depending on the difference between sidewalk level and the plinth height for each installation.

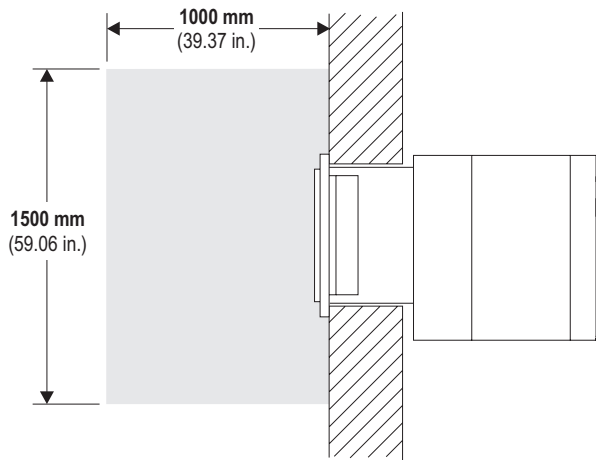
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>
	Statement	Display	Cash Exit	No. 5 Key	Envelope Depository Dispenser	Audio Jack Plug	Camera Window	Card Reader	Receipt	Speaker
										
Height (from Base of Terminal)	<b>994.5 mm</b> (39.15 in.)	<b>845.5 mm</b> (33.29 in.)	<b>699.0 mm</b> (27.52 in.)	<b>652.0 mm</b> (25.67 in.)	<b>694.0 mm</b> (27.32 in.)	<b>741.5 mm</b> (29.19 in.)	<b>825.5 mm</b> (32.5 in.)	<b>883.5 mm</b> (34.78 in.)	<b>969.0 mm</b> (38.15 in.)	<b>985.0 mm</b> (38.78 in.)
Depth (from front of Collar)	<b>151.0 mm</b> (5.94 in.)	<b>150.5 mm</b> (5.93 in.)	<b>116.0 mm</b> (4.57 in.)	<b>46.5 mm</b> (1.83 in.)	<b>116.0 mm</b> (4.57 in.)	<b>105.0 mm</b> (4.13 in.)	<b>130.0 mm</b> (5.12 in.)	<b>138.0 mm</b> (5.43 in.)	<b>157.0 mm</b> (6.18 in.)	<b>178.0 mm</b> (7.01 in.)



## Ambient Lighting


If the ATM is fitted with a video camera it is strongly recommended that there is a minimum of 50 LUX lighting at floor level within the area illustrated below. This lighting conforms to:

- Australian Standard for Automatic Teller Machines (1990)
- Lighting for Automated Teller Machines as prepared by Illuminating Engineering Society of North America (1997).





# Installation And Service Clearances



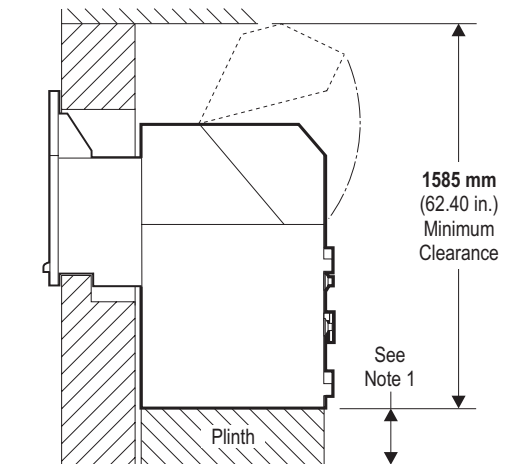
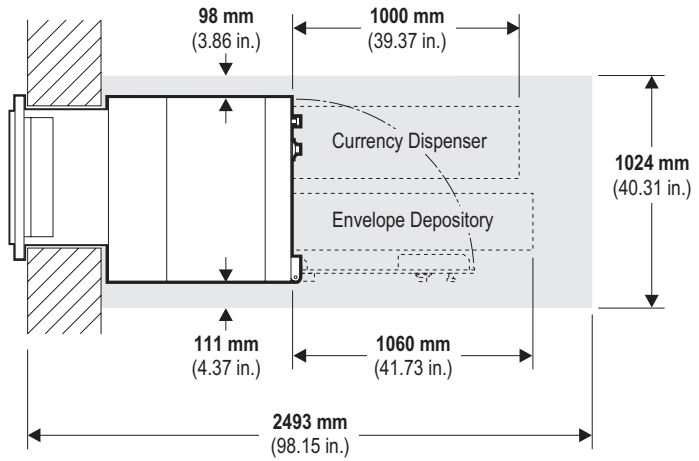
## Minimum Clearances

The following illustrations show the **minimum** areas required for installing and servicing the ATM.

### **Important Notice to Users**

If your ATM is to be upgraded with the dual dispenser option, the recommended clearance is mandatory for your installation.

Physical Requirements  
Installation And Service Clearances



**Note 1:** The height of the plinth depends upon the difference in height between sidewalk level and the interior floor. If there is no difference, as the illustration shows, the plinth must have a height of **434 mm** (17.09 in.) for the recommended installation height, or **234 mm** (9.21 in.) for the lowered installation height.

**Note 2:** If your ATM is installed within the minimum height clearance of **1585 mm** (62.40 in.) the ceiling will restrict the full opening of the top-box. If you want the top-box to have a clearance above the top-box when fully open, refer to the recommended clearance.

**Note 3:** When the ATM is installed within the minimum service clearance, the 80 Column printer must be removed to service the keyboard and shutter areas.

**Note 4:** The minimum clearance, is the same size as 5684.



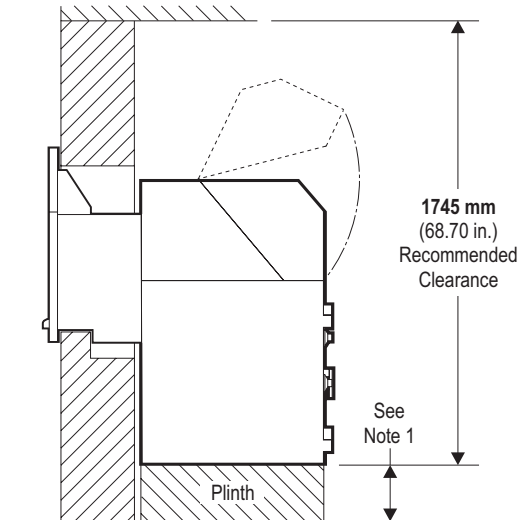
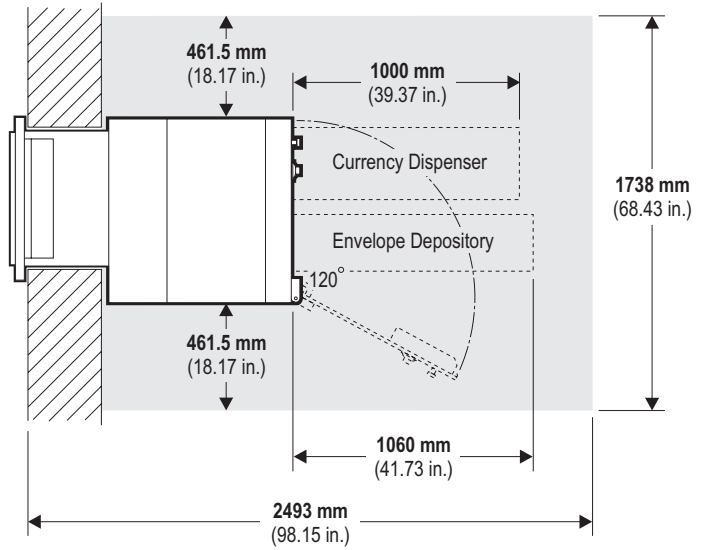
## Recommended Clearances

The following illustrations show the **recommended** areas required for installing and servicing the ATM.

### **Important Notice To Users**

If your ATM is to be upgraded with the dual dispenser option, the recommended clearance is mandatory for your installation.

Physical Requirements  
Installation And Service Clearances



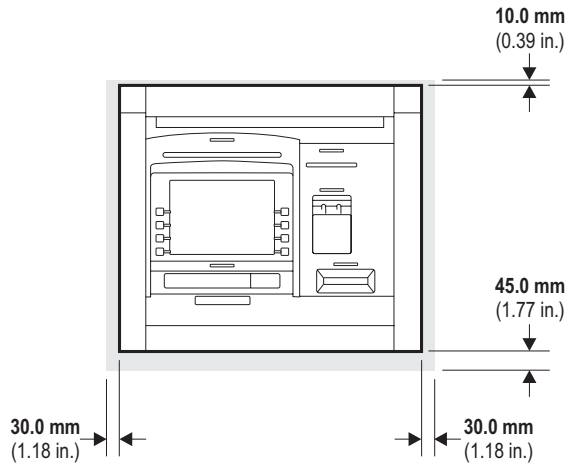
**Note 1:** The height of the plinth depends upon the difference in height between sidewalk level and the interior floor. If there is no difference, as the illustration shows, the plinth must have a height of **434 mm** (17.09 in.) for the recommended installation height, or **234 mm** (9.21 in.) for the lowered installation height.

**Note 2:** The security enclosure door should be opened to an angle of  $120^{\circ}$  to allow enough space to service a second dispenser.

## Exterior Wall

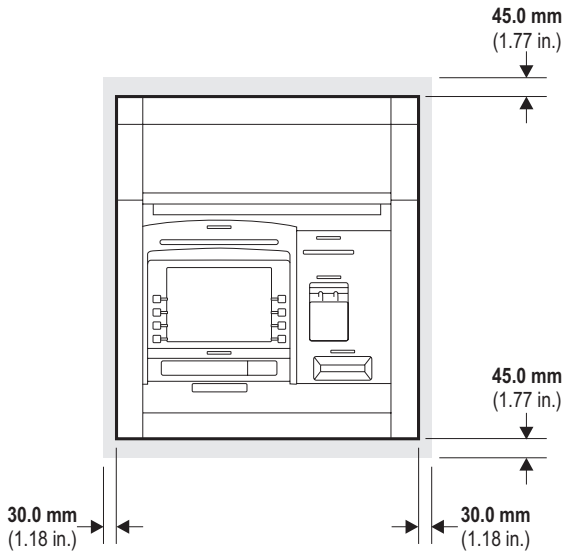
The following illustration shows the **minimum** clear wall area required around the collar (facia surround) for installation and servicing.

### Standard Collar



**Note:** A standard collar is configured when you order Personas86 features 240 and 770.

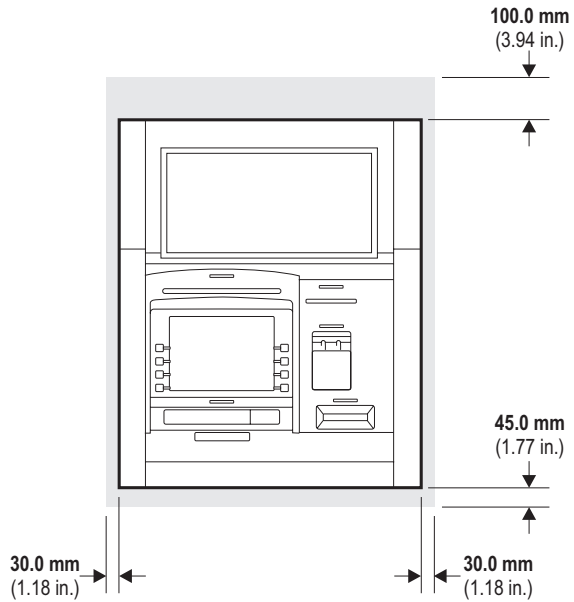
### Standard Collar With Advert Light



**Note:** A standard collar with advert light is configured when you order Personas86 features 241 and 770.



## Lowered Height Collar

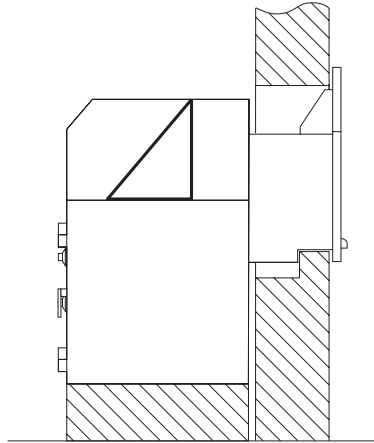


**Note:** A lowered height collar is configured when you order Personas86 features 240 and 771 .

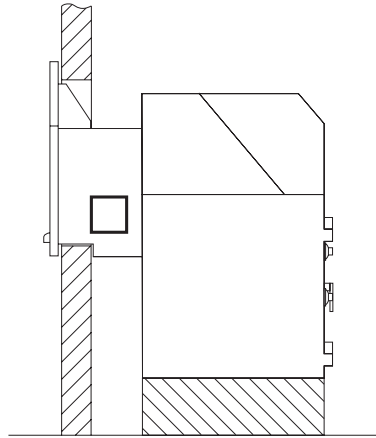
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## Service Access Panels

For installations where there is enough room to stand at the right-hand side of the sleeve (when viewing the ATM from the rear) there is an access panel on the top-box, as shown below. The panel can be removed to allow easier access to the keyboard and shutter areas.



There is another access panel on the left-hand side which is only accessible if the ATM is installed through a thin wall. This panel is located on the sleeve, as shown below.



---

## Hole In The Wall

Personas 86 can be installed through an existing NCR 5081/84/85, 5684/85 or Personas 84/85 hole in the wall with minimal rework required depending on the ATM being replaced, wall thickness and the local cardholder access legislation.

Customised collars or surrounds made by the owning organisation may need rework or replacement due to the following installation requirements.

The installation categories listed in this chapter, describe two different installation heights: “NCR Recommended” or “Lowered”, described below.

### **NCR Recommended Height For No Modifications**

This height is recommended for replacement installations, to avoid modifying the existing hole in the wall. This height does not comply with the regulations listed in the next section.

The NCR Recommended Height for Personas 86, is the same as the Recommended Height for 5081/84/85, 5684/85 or Personas 84/85. The height from sidewalk level to the base of the hole in the wall must be **1026 mm** (40.39 in.) This means Personas 86 is installed with the number five key on the keyboard, at **1086 mm** (42.76 in.) from sidewalk level (this keyboard height was **1100 mm** (43.31 in.) for Personas 84/5).

## Lowered Heights

The following installation heights have been designed to meet the regulations listed below and therefore meet the requirements of both able-bodied and those with extra needs.

For the purpose of showing illustrations within this manual, all 'Lowered Height' illustrations show the middle of the number five key on the keyboard no higher than **900 mm** (35.43 in.) from sidewalk level.

### **Centre for Accessible Environments in the UK (CAE)**

To comply with UK Design Guidelines "Access to ATMs", published by the Centre for Accessible Environments in the UK (CAE), the ATM must be installed with the middle of the number five key on the keyboard, no higher than **900 mm** (35.43 in.) from sidewalk level.

### **Americans with Disabilities Act (ADA)**

To comply with the Americans with Disabilities Act (ADA) the ATM must be installed with the middle of the number five key on the keyboard, no higher than **870 mm** (34.25 in.) from sidewalk level. This ensures the height of the highest consumer interface element is below **1220 mm** (48.00 in.) from sidewalk level.

### **Canadian Standards Association (CSA)**

To comply with the Canadian Standards Association (CSA), the ATM must be installed with the middle of the number five key on the keyboard, no higher than **850 mm** (33.46 in.) from sidewalk level. This ensures the height of the highest consumer interface element is below **1200 mm** (47.24 in.) from sidewalk level.

## Installation Categories

The physical installation of Personas 86 is divided into five different categories.

- 1 An installation, at the NCR Recommended Height, where a Personas 86 replaces a Personas 84, 5X84 or a 5081 and where no modification has been made to the hole in the wall. The existing plinth must be replaced with a new one.  
This category also includes a new installation of Personas 86 at the NCR Recommended Height. See page 1-25.
- 2 An installation, at the NCR Recommended Height, where a Personas 86 replaces a Personas 85, or a 5X85 and where no modification has been made to the hole in the wall. The existing plinth must be replaced with a new one. See page 1-27.
- 3 A new installation of a Personas 86 at the Lowered Height. See page 1-30.
- 4 An installation where a Personas 86 replaces a Personas 84, 5X84 or a 5081. The hole in the wall must be modified and the plinth must be replaced with a new one to position the Personas 86 keyboard at the Lowered Height. See page 1-32.
- 5 An installation where a Personas 86 replaces a Personas 85, or a 5X85. The hole in the wall must be modified and the plinth must be replaced with a new one to position the Personas 86 keyboard at the Lowered Height. See page 1-34.

For cases 3, 4 and 5 a “Lowered Height” collar must be used. This is designed with a cut away at the top to allow taller customers a clear view of the facia. For cases 1 and 2, a standard collar or standard collar with advert must be used.

For cases 2 and 5 an infill panel is required to accommodate the larger hole used by the previous Personas 85 or 5X85 installation.

For cases 1,2,4 and 5 where an ATM is being replaced with a Personas 86, the location of the cable access hole in the base of the ATM will move. Refer to the section “Requirements For The Floor” for more details.

## Replacing Personas 84, 5X84 or 5081 With No Modifications To Hole In The Wall (Recommended Height)

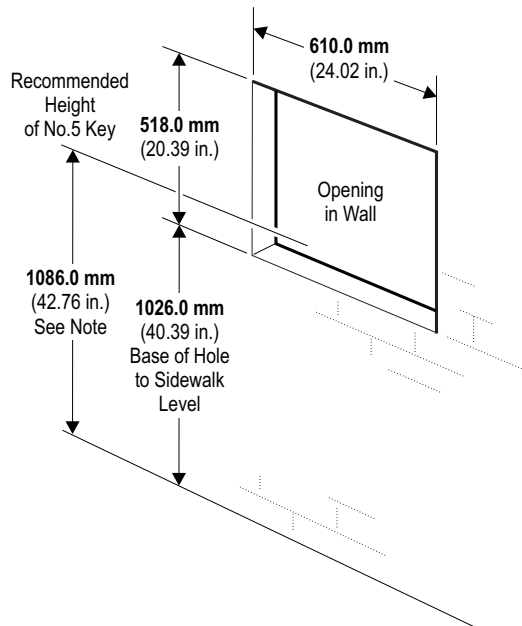
It is the responsibility of the owning institute to ensure that the heights from the sidewalk level to the facia items comply with any local regulations. Where no such regulations exist, Personas 86 can be installed at the NCR Recommended Height for Personas 84, 5X84 and 5081 as shown in the following illustrations.

**Note 1:** A standard or advert collar is required at installation.

**Note 2:** The existing plinth must be replaced with a new one.

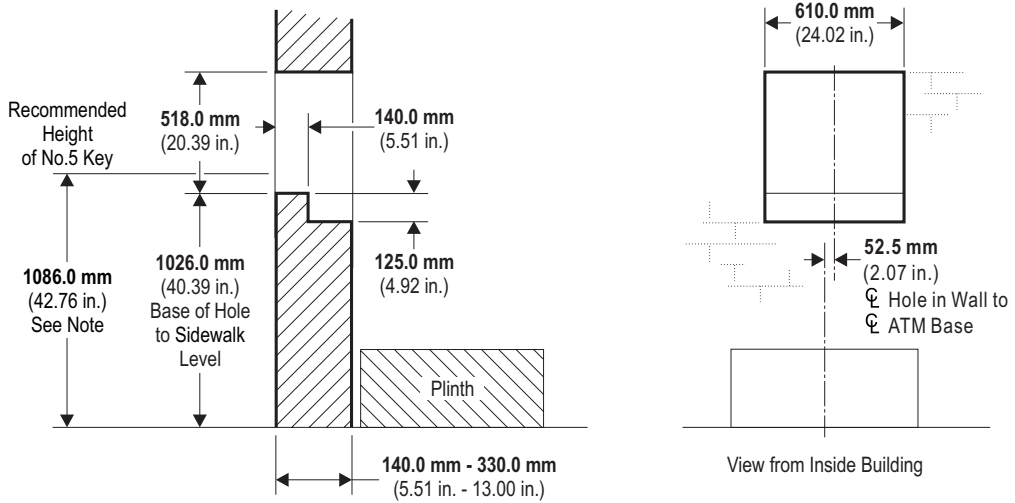
### Dimensions for an ATM through a Thin Wall

A thin wall is defined as up to **140 mm (5.51 in.)** thick.



Replacing Personas 84, 5X84 or 5081 With No Modifications To Hole In The Wall (Recommended Height)

**Dimensions for an ATM through a Thick Wall** A thick wall is defined as being from **140 mm (5.51 in.)** to **330 mm (13 in.)** thick.



**Plinth Requirements** Refer to page 1-39 for plinth requirements.



## Replacing Personas 85 or 5X85 With No Modifications To Hole In Wall (Recommended Height)

It is the responsibility of the owning institute to ensure that the heights from the sidewalk level to the fascia items comply with any local regulations. Where no such regulations exist, Personas 86 can be installed at the NCR Recommended Height for Personas 85 or 5X85 as shown in the following illustrations.

**Note 1:** A standard or advert collar are required at installation, as well as a standard infill panel. For information on the infill panel, refer to the publication “Personas86 ATM Installation Manual”, (B006-6193-A000).

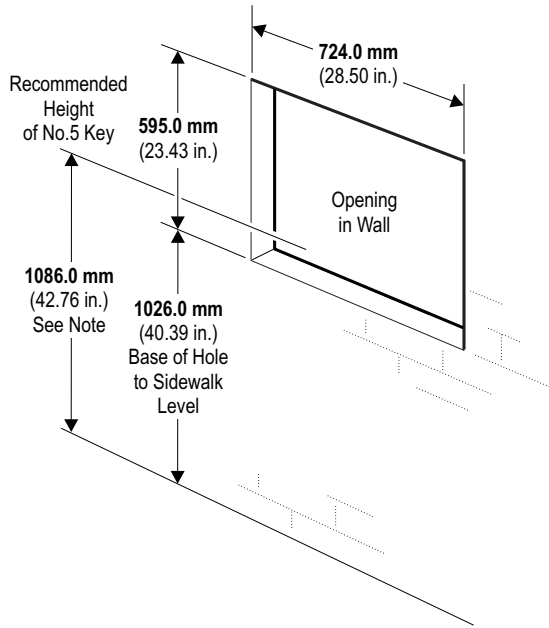
**Note 2:** The existing plinth must be replaced with a new one, as the location of the bolt holes and the cable access hole are different for Personas86.

For more information, refer to “Personas85 ATM Site Preparation Manual”, (B006-0000-0027).

Replacing Personas 85 or 5X85 With No Modifications To Hole In Wall (Recommended Height)

**Dimensions for an ATM through a Thin Wall**

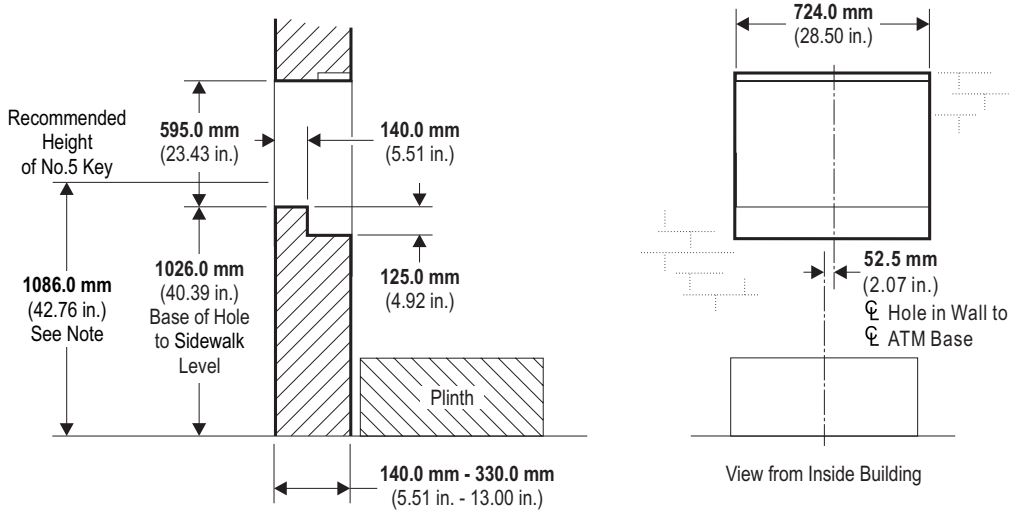
A thin wall is defined as up to **140 mm (5.5 in.)** thick. The following illustration shows the dimensions before the infill panel has been fitted.



**Note:** When replacing a 5085 or 5685 ATM, the dimension **595 mm (23.43 in.)** will be **624 mm (24.57 in.)**.

**Dimensions for an ATM through a Thick Wall**

A thick wall is defined as being from **140 mm (5.5 in.)** to **330 mm (13 in.)** thick).



**Plinth Requirements**

Refer to page 1-39 for plinth requirements.

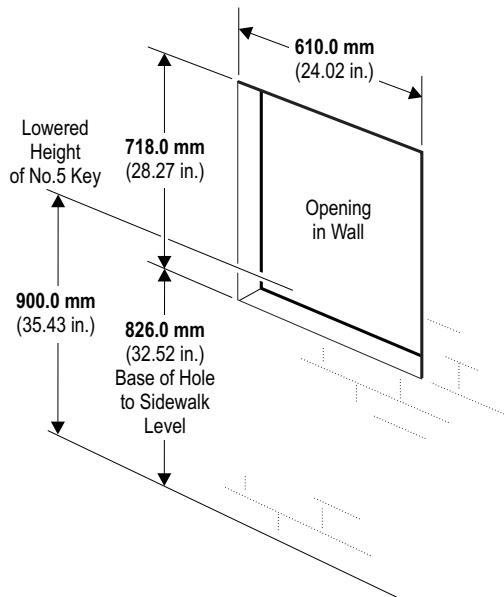
# Installing Through a New Hole at Lowered Height

It is the responsibility of the owning institute to ensure that the heights from the sidewalk level to the facia items comply with any local regulations. To comply with the UK ATM Design Guidelines (CAE), it is recommended that the height to the bottom of the hole is as shown in the following illustrations. To comply with ADA and CSA, refer to the previous section “Lowered Heights”.

**Note:** A “Lowered Height” collar is required at installation.

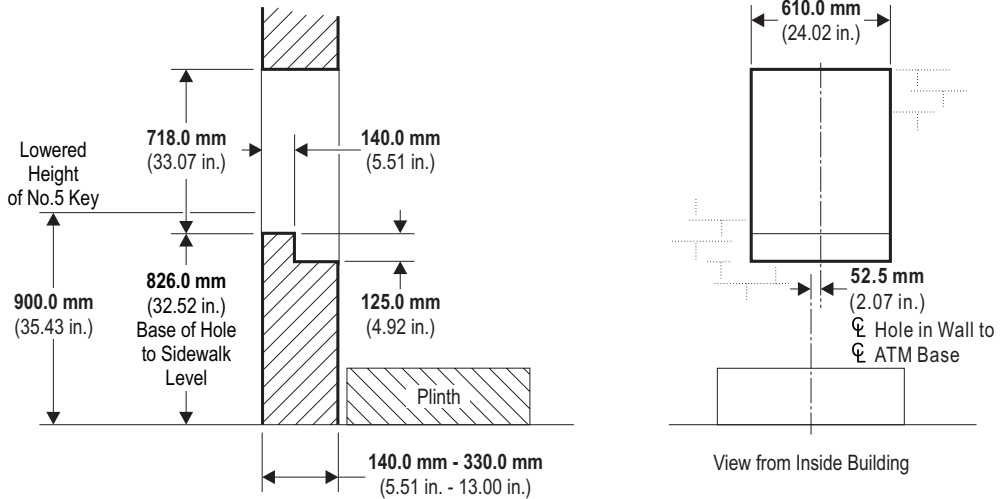
## Dimensions for an ATM through a Thin Wall

A thin wall is defined as up to **140 mm (5.5 in.)** thick.



**Dimensions for an ATM through a Thick Wall**

A thick wall is defined as being from **140 mm (5.5 in.)** to **330 mm (13 in.)** thick.



**Plinth Requirements**

Refer to page 1-39 for plinth requirements.

## Replacing Personas 84, 5X84 or 5081 at the Lowered Height

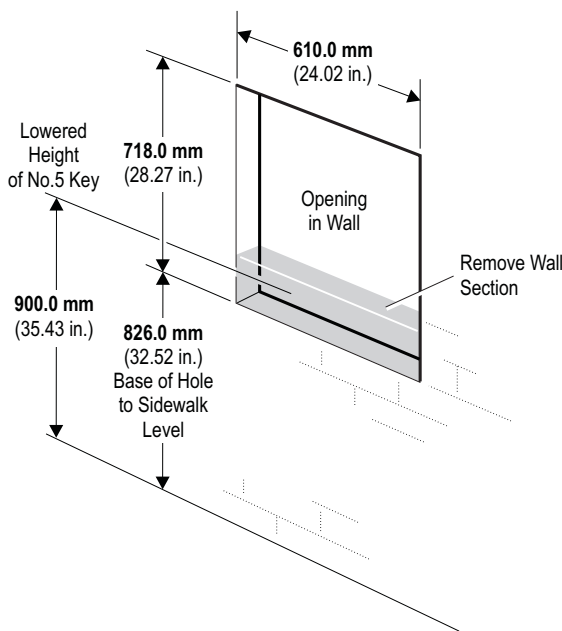
It is the responsibility of the owning institute to ensure that the heights from the sidewalk level to the fascia items comply with any local regulations. To comply with the UK Design Guidelines (CAE), it is recommended that the height to the bottom of the hole is as shown in the following illustrations. To comply with ADA and CSA, refer to the previous section “Lowered Heights”. Modifications to the hole in the wall are also shown.

**Note 1:** A “Lowered Height” collar is required at installation.

**Note 2:** The existing plinth must be replaced with a new one.

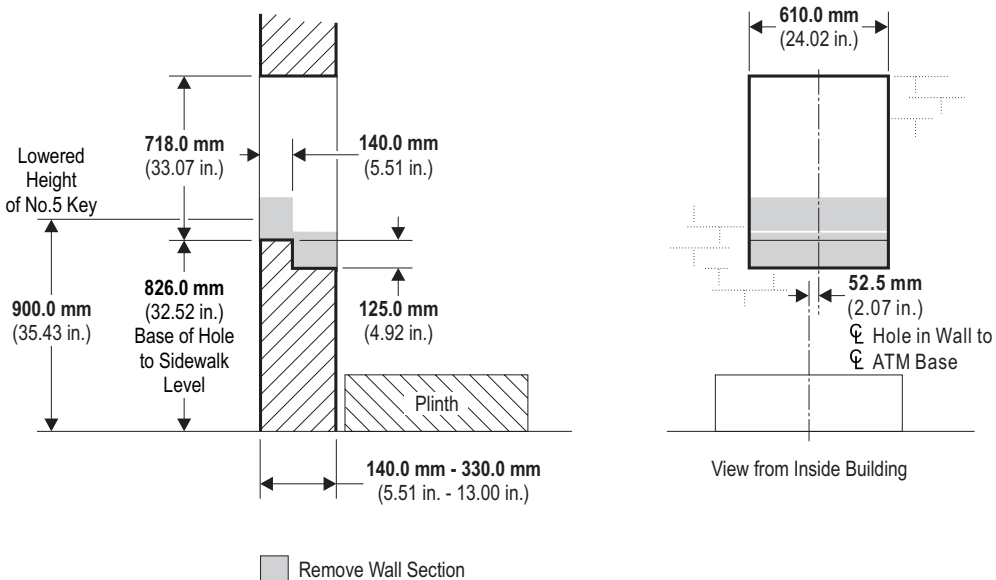
### Dimensions for an ATM through a Thin Wall

A thin wall is defined as up to **140 mm** (5.5 in.) thick. The following illustration shows the dimensions before and after modifications have been done.



## Dimensions for an ATM through a Thick Wall

A thick wall is defined as being from **140 mm (5.5 in.)** to **330 mm (13 in.)** thick. The following illustration shows the modifications required for the hole in the wall.



**Note:** The top of the hole should not be modified. The bottom of the hole should be lowered as shown.

## Plinth Requirements

Refer to page 1-39 for plinth requirements.

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## Replacing Personas 85 or 5X85 at the Lowered Height

It is the responsibility of the owning institute to ensure that the heights from the sidewalk level to the fascia items comply with any local regulations. To comply with the UK Design Guidelines (CAE), it is recommended that the height to the bottom of the hole is as shown in the following illustrations. To comply with ADA and CSA, refer to the previous section “Lowered Heights”. Modifications to the hole in the wall are also shown.

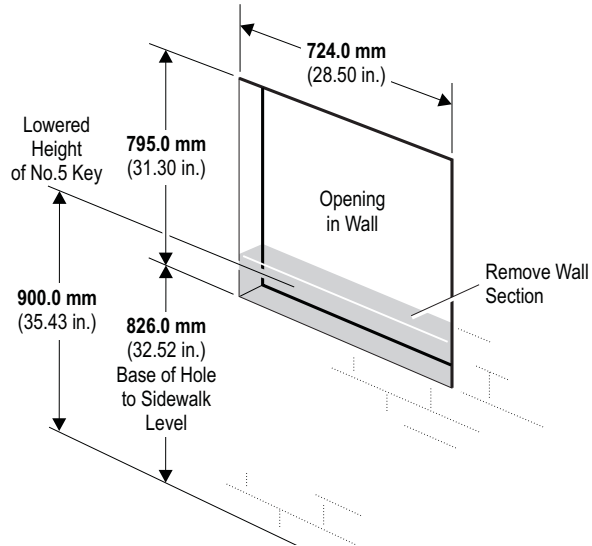
**Note 1:** A “Lowered Height” collar and a “Lowered Height” infill panel are required at installation. For information on the infill panel, refer to the publication “Personas 86 ATM Installation Manual”, (B006-6193-A000).

**Note 2:** The existing plinth must be replaced with a new one.



## Dimensions for an ATM through a Thin Wall

A thin wall is defined as up to **140 mm** (5.5 in.) thick. The following illustration shows the dimensions before and after modifications to the hole in the wall have been done and before the infill panel has been fitted.

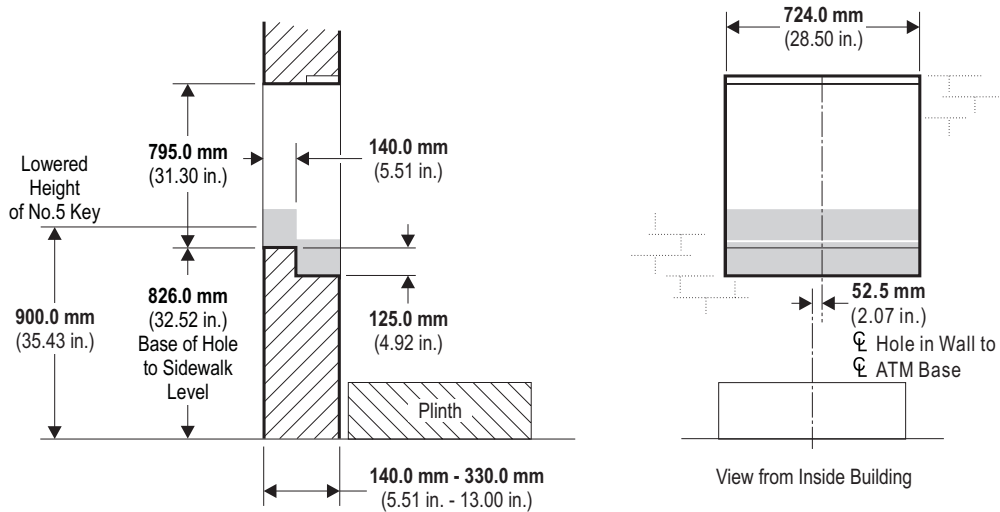


**Note:** When replacing a 5085 or 5685 ATM, the dimension **795 mm (31.30 in.)** will be **824 mm (32.44 in.)**.

Replacing Personas 85 or 5X85 at the Lowered Height

**Dimensions for an ATM through a Thick Wall**

A thick wall is defined as being from **140 mm (5.5 in.)** to **330 mm (13 in.)** thick. The following illustration shows the modifications required for the hole in the wall.



**Note:** The top of the hole should not be modified. The bottom of the hole should be lowered as shown.

**Plinth Requirements**

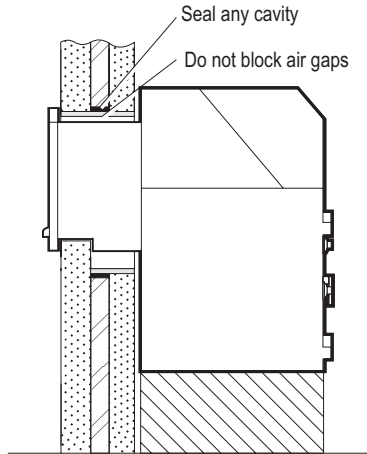
Refer to page 1-39 for plinth requirements-

## Sealing The Hole In The Wall Against Cold And Water

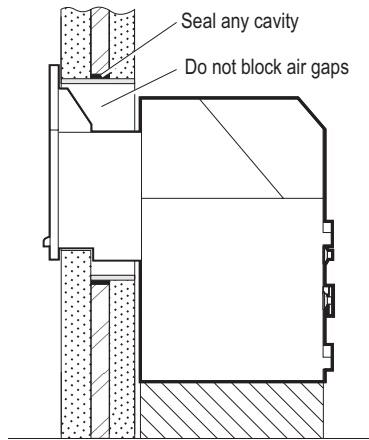
To ensure that the temperature around the ATM is maintained during cold weather, it is important that the wall opening is prepared correctly. Any cavity in the wall should not extend into the wall opening, but sealed to provide a flush surface. The gap between the ATM sleeve and the wall opening should be left clear to allow air at room temperature to circulate.

To enable a good weather seal to be made between the wall and the ATM fascia, a **25 mm** (1 in.) wide smooth surface is required around the periphery of the wall opening.

### NCR Recommended Height Installation



### Lowered Height Installation



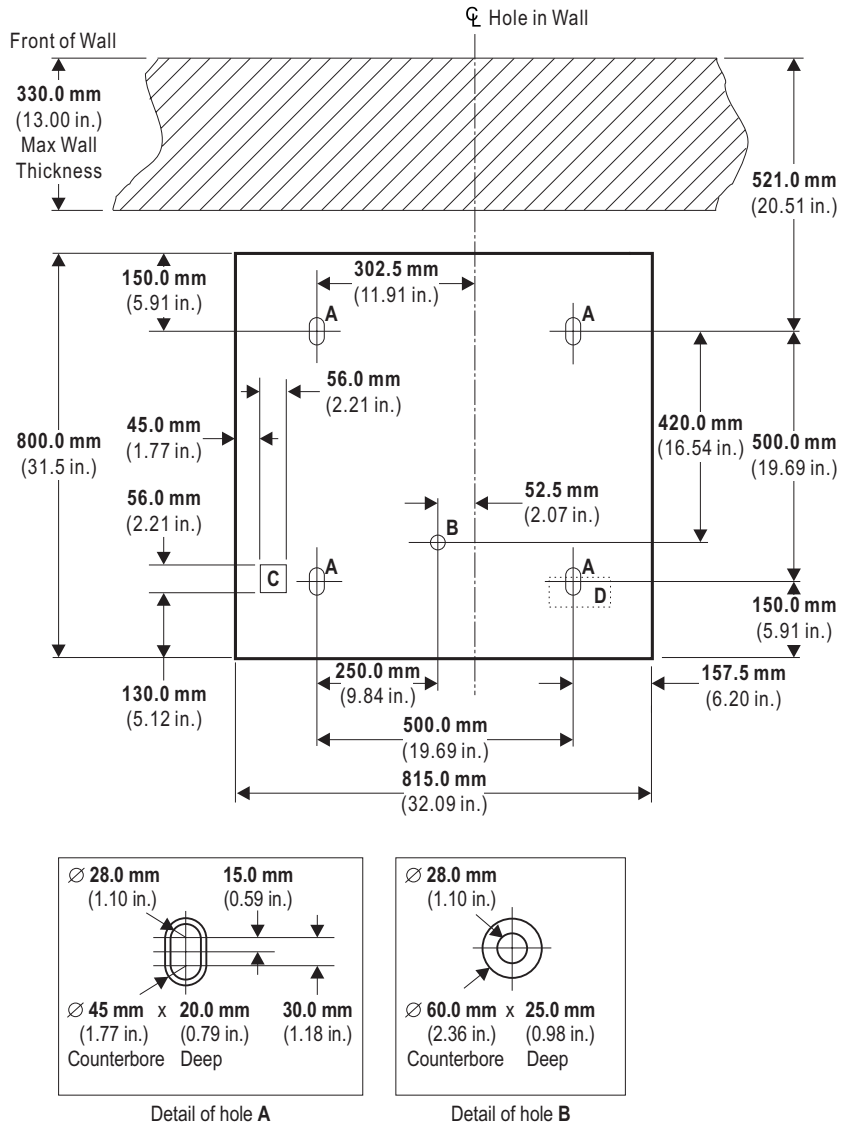
## Requirements For The Floor

### Support Plinth

The following illustrations show a plan of the base of the ATM (viewed from above) and its relationship with the exterior wall. If a plinth is used it must be no smaller than the base of the ATM and it must be constructed of a material, and in such a way, that it is capable of supporting the weight of the ATM (see page 1-51).

**Definition:** A “plinth” is a platform on to which the ATM is bolted. This plinth enables the ATM to be installed at the required height through the wall.

### Installation without Infill Panel required (CEN Grade III, CEN Grade IV and Spanish Special Security Enclosures)



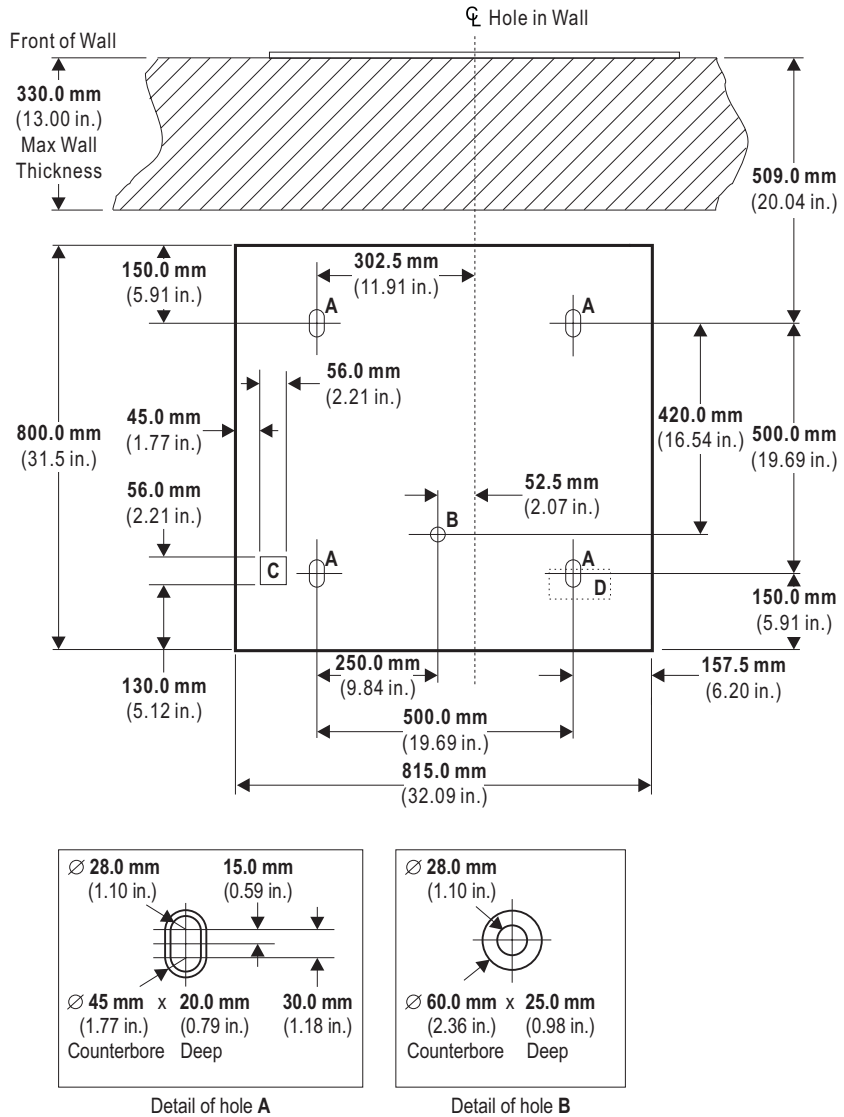
**Note 1:** For information on the infill panel, refer to the publication “Personas 86 ATM Installation Manual”, (B006-6193-A000).

**Note 2:** The boundary, marked with a ‘C’, shows the cable access hole for all cables.

**Note 3:** The dotted boundary, marked with a ‘D’, shows where the cable access hole would be on an ATM being replaced with Personas 86.

**Note 4:** The location of the cable access hole depends on whether your security enclosure is CEN or UL.

### Installation with Infill Panel required (CEN Grade III, CEN Grade IV and Spanish Special Security Enclosures)





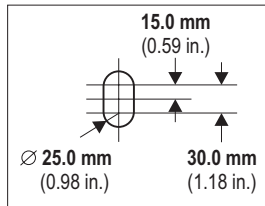
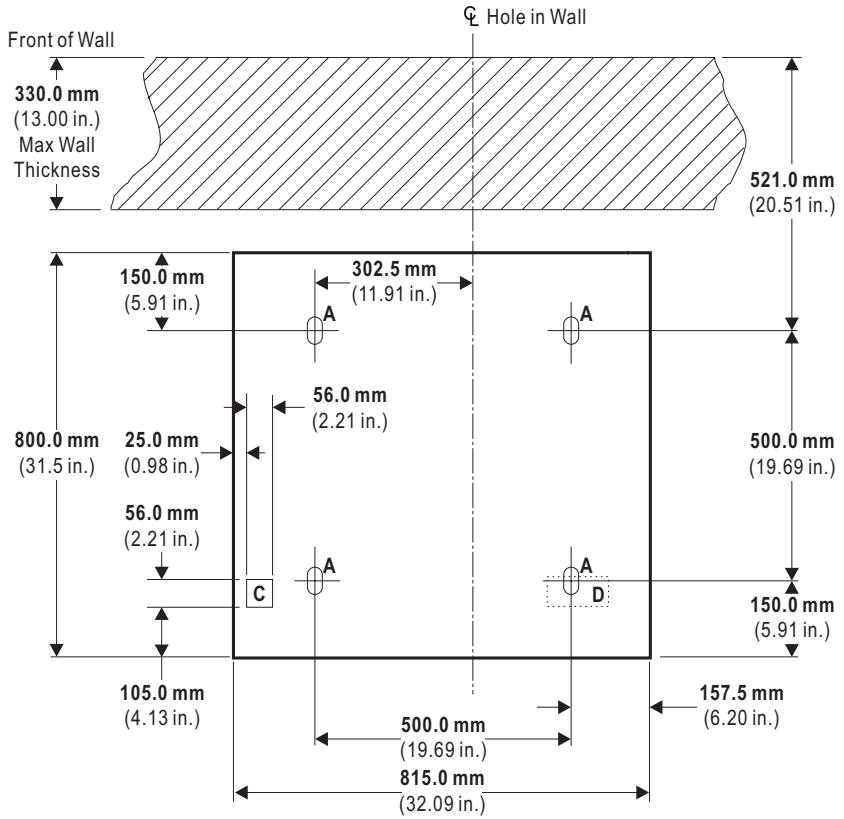
**Note 1:** For information on the infill panel, refer to the publication “Personas 86 ATM Installation Manual”, (B006-6193-A000).

**Note 2:** The boundary, marked with a ‘C’, shows the cable access hole for all cables.

**Note 3:** The dotted boundary, marked with a ‘D’, shows where the cable access hole would be on an ATM being replaced with Personas 86.

**Note 4:** The location of the cable access hole depends on whether your security enclosure is CEN or UL.

### Installation without Infill Panel required (UL Security Enclosure Only)



Detail of hole A

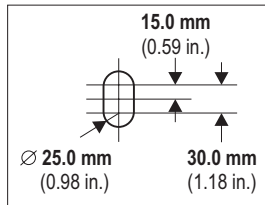
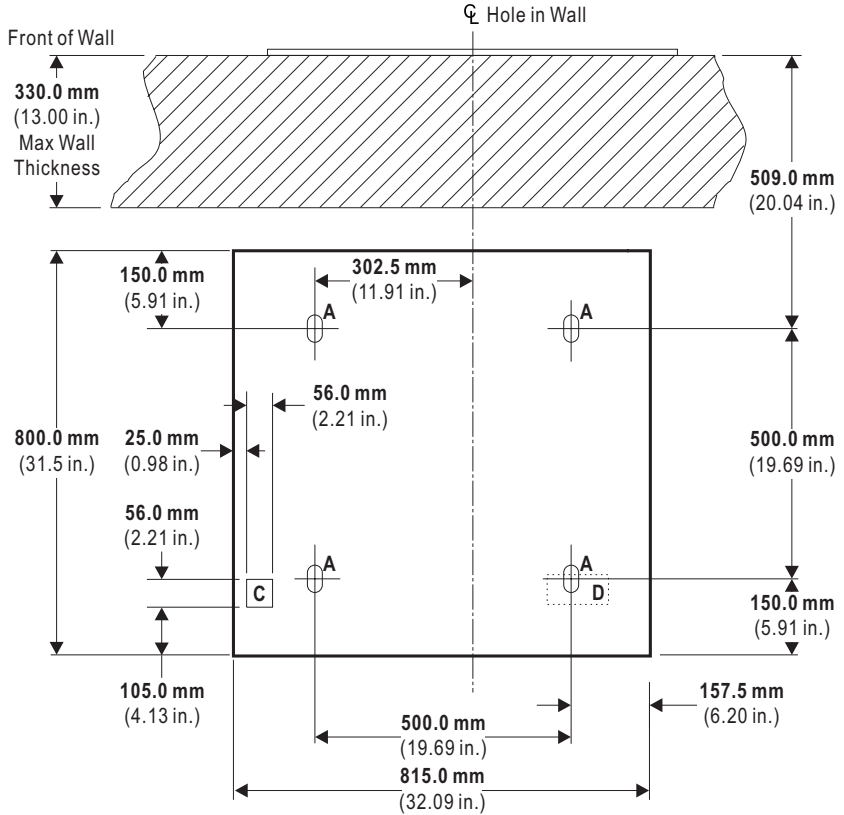
**Note 1:** For information on the infill panel, refer to the publication “Personas 86 ATM Installation Manual”, (B006-6193-A000).

**Note 2:** The boundary, marked with a ‘C’, shows the cable access hole for all cables.

**Note 3:** The dotted boundary, marked with a ‘D’, shows where the cable access hole would be on an ATM being replaced with Personas 86.

**Note 4:** The location of the cable access hole depends on whether your security enclosure is CEN or UL.

### Installation with Infill Panel required (UL Security Enclosure Only)



Detail of hole A

**Note 1:** For information on the infill panel, refer to the publication “Personas 86 ATM Installation Manual”, (B006-6193-A000).

**Note 2:** The boundary, marked with a ‘C’, shows the cable access hole for all cables.

**Note 3:** The dotted boundary, marked with a ‘D’, shows where the cable access hole would be on an ATM being replaced with Personas 86.

**Note 4:** The location of the cable access hole depends on whether your security enclosure is CEN or UL.

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## Mandatory Modifications To Plinth Or Floor

The following modifications must be made to the plinth:

### Concrete Plinth

If a concrete plinth is used at installation, a section of the plinth should be cut-out to allow the cables which enter the base of the ATM to be fitted.

### Adjustable Plinth

If an adjustable plinth is used, holes should be drilled through the plinth, to allow the cables which enter the base of the ATM to be fitted.

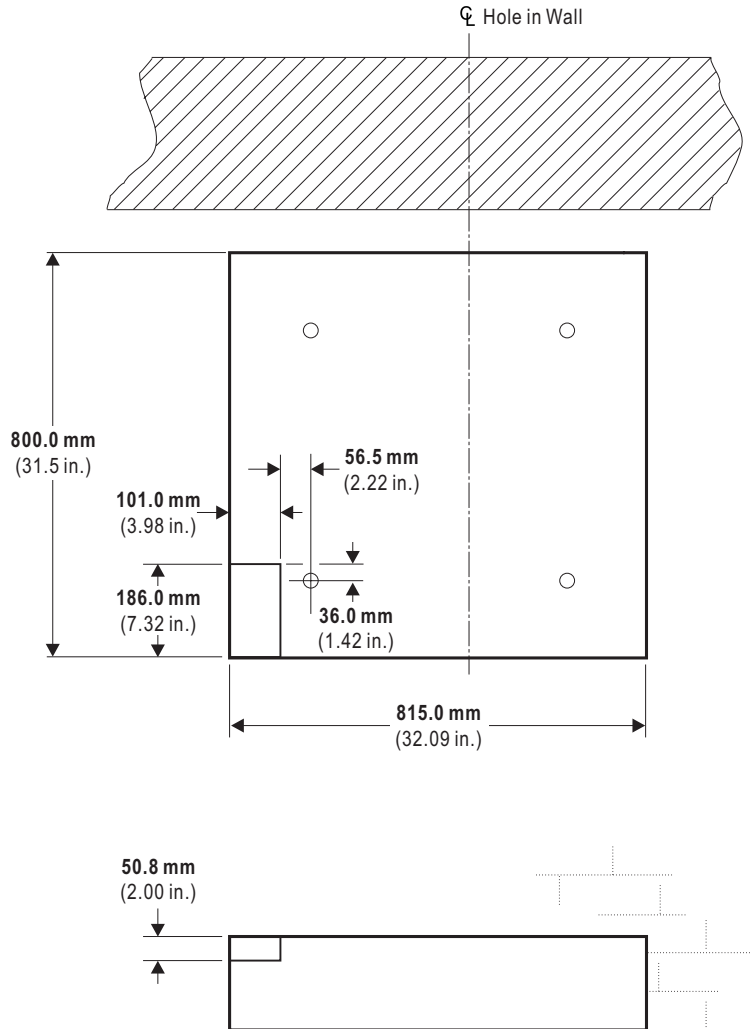
### ATM installed directly on to the Floor

If the ATM is installed directly on to the floor, without a plinth, the cabling must be routed through a channel in the floor.

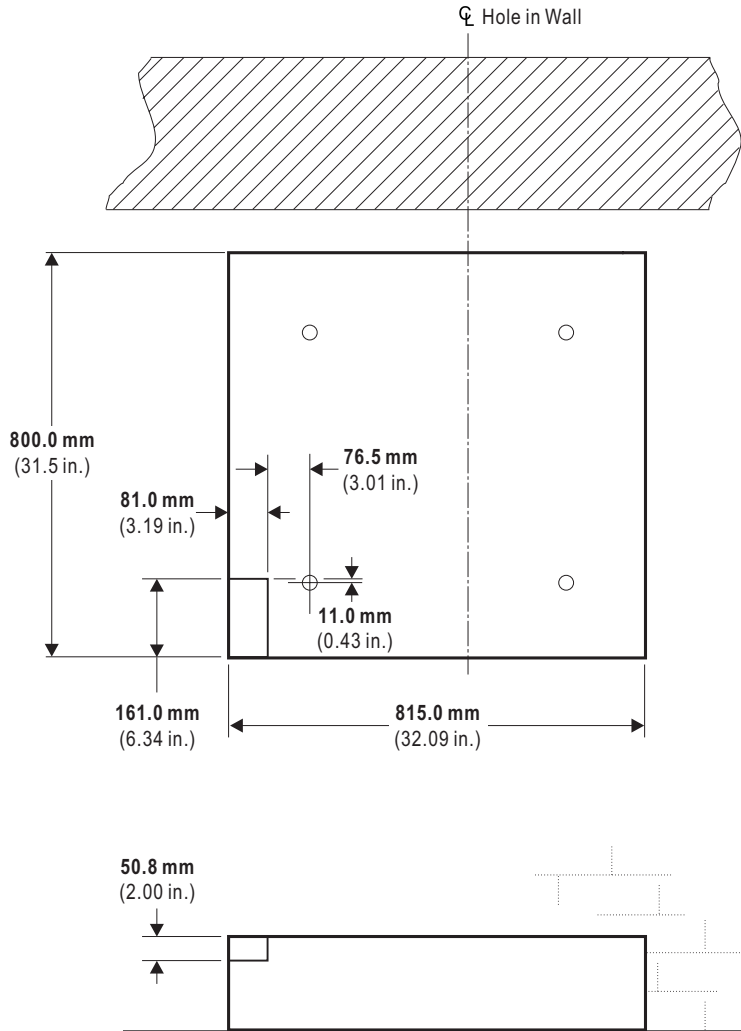
The following illustrations show the size of cut-out required for all security enclosure options.

**Note:** If a channel needs to be cut through the floor, this area must be larger to allow the cabling to be routed along the floor and under the ATM.

### Plinth for CEN Grade III, CEN Grade IV and Spanish Special Security Enclosures



### Plinth for UL Security Enclosure Only





## Floor Loading

The ATM must be installed on a floor capable of supporting the maximum weight. Only the maximum weight should be considered as additional options may be added after installation:

- CEN Grade III, CEN IV or Spanish Special Security enclosures:
  - Maximum weight: **890 kg** (1962.1 lb.)
  - Floor loading: **1295 kg/m<sup>2</sup>** (265.3 lb./ft<sup>2</sup>)
- Standard Security enclosure (UL):
  - Maximum weight: **662.6 kg** (1460.8 lb.)
  - Floor loading: **964 kg/m<sup>2</sup>** (197.5 lb./ft<sup>2</sup>).

## Security Bolts

The ATM should be bolted to the floor, through the 'A' holes, using four bolts with anchor washers. If the ATM is to be bolted down, the floor or plinth must be capable of withstanding the loading imposed by the anchor points for the bolts. The bolts and anchors must be supplied by the owning organisation.

The following is the minimum specification for bolts to secure the ATM to a plinth or a stone/concrete floor, through the 'A' holes:

- CEN Grade III, CEN IV or Spanish Special Security enclosures:  
**16 mm** (0.63 in.) diameter x **120 mm** (4.72 in.) minimum length.

**Note 1:** The anchor washer must be a minimum of **3 mm** (0.12 in.) thick with an outer diameter of **40 mm** (1.57 in.) and an inner diameter of **18 mm** (0.71 in.).

**Note 2:** The centre bolt hole ('B') in the floor is counterbored to a larger diameter than the other four. This enables a security alarm sensor to be fitted through the hole.

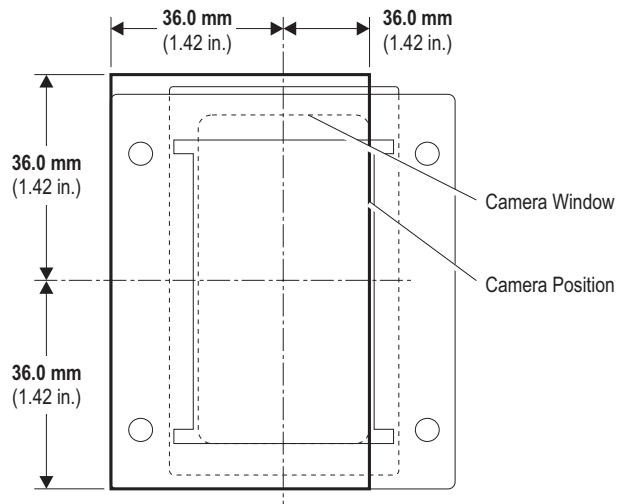
- Standard Security enclosures (UL):  
**16 mm** (0.63 in.) diameter x **100 mm** (3.94 in.) minimum length.

## Floor Covering

An antistatic floor covering should be used and must be of a type that will not generate dust or fluff.

## Internal Space Constraint For Fitting A Third Party Video Camera

If a third party video camera is to be installed, there is a space constraint to consider. The location of the video camera is directly behind the camera window. The following dimensions should be calculated from the centre point on the window, as shown below.



**Note 1:** The depth constraint, from the rear of the camera window, is **220 mm (8.66 in.)**.

**Note 2:** If your ATM is upgraded with coin dispenser at a later date, the available space for a camera will be greatly reduced.

Chapter 2

# Electrical Requirements

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Table of Contents  
**Electrical Requirements**

# Power Quality Distribution And Grounding Requirements

Voltage transients, line noise, surges, sags, impulses, and spikes may be experienced routinely or sporadically. When such phenomena occur, the use of protective devices, as described in Attachments A and B, may be required to ensure proper operation of the equipment.

## AC Power Requirements

The maximum current requirements at various input voltages are:

- 5.05A at 120V
- 2.01A at 240V.

The maximum inrush current at the following input voltage is:

- 200A peak at 136V
- 150A peak at 257V.

## Input Voltage Setting

The ATM can operate from the following input mains voltages:

- 90V to 136V at 50/60Hz
- 198V to 257V at 50/60Hz.

## Power Consumption

A power consumption rate for your ATM can be calculated from the following information:

### Idle Mode

- 307 Watts at 120V
- 177 Watts at 240V.

**Note:** Power consumption is dependent on the configuration of your ATM.

### Under Transaction

- 606 Watts at 120V
- 482 Watts at 240V.

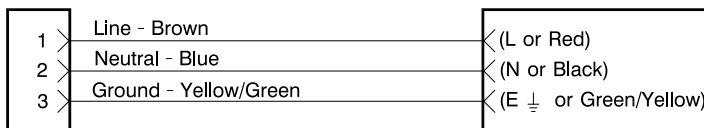
**Note:** Power consumption is dependent on the transaction rate of your ATM.

## Power Cable

The ATM is supplied either as a 120V or a 220-240V unit. 120V ATMs are supplied with a power cable fitted with a NEMA type 5-15P power source connector. 220-240V ATMs are supplied with an unterminated power cable. Information about suitable power connectors is supplied with the accessories. Power connectors must be wired as shown below.

The power cable supplied is **3 metres (9 ft. 9.00 in.)** in length. If it is necessary to increase this length to meet site requirements, then the extension must satisfy local or country regulations.

**Warning This equipment must be earthed.**



**Note:** The annotations within brackets are included to comply with United Kingdom legislation and refer to the markings on United Kingdom three pin plugs.

## Grounding Requirements

The ATM operates from a single phase, 3 wire supply; live, neutral and ground. The power requirements of this unit will normally permit it to operate within existing wiring configurations and from existing branch mains outlets providing:

- 1 Where this supply is provided from a general purpose distribution panel, then the other branch circuits from this panel must not be used to support heavy inductive loads such as air conditioners, elevators, microwave ovens, and so on. Nor may such equipment be operated on the same branch circuit as the ATM.
- 2 If using distribution panels, all branch circuit grounding conductors must be connected to an insulated terminal strip in the distribution panel. The grounding conductor from the distribution panel to the building ground point must be at least equal in size to the power conductor necessary to supply the NCR system.

**Note:** The building ground point can affect data integrity. For additional information refer to the 'Data Line Transient Protection' section of Attachment A.

<b>Transient Power Loss</b>	The voltage loss due to power interruptions must not be more than 50% of the nominal value for a maximum of one half cycle at a maximum rate of 1 every 10 seconds.
<b>EMI Susceptibility</b>	The ATM meets EN 50082-1 Prt 1 (1992) "Generic Immunity Standard".
<b>EMI Emission</b>	The ATM meets FCC CFR 47 Prt 15 Sub J Class A and EN 55022 (1995) Class A requirements for radiated and conducted emission.

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# Communications Requirements

Voltage transients, line noise, surges, sags, impulses, and spikes may be experienced routinely or sporadically. When such phenomena occur, the use of protective devices, as described in Attachment A, may be required to ensure proper operation of the equipment.

It is the responsibility of the customer to assure that all installation preparations are complete and in compliance with NCR specifications and requirements and with all national, state or local telephone and telegraph regulations and laws.

## High Order Communications Cable

The high order communications cable type depends upon the communications system to be used. The following cable may be required.

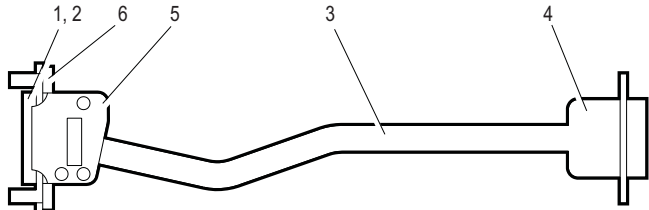
**Note:** Communications cables are not supplied with the ATM. If these cables are required, it is the customer's responsibility to have them installed. The specification for this cable is supplied in the following section. When producing cables allow for **1.8 metres** (6 feet) of cable within the ATM.

### **High Order Communications Standard Cable (RS-232)**

The standard high order communications system supports most common bit and byte oriented disciplines (synchronous and asynchronous) with an RS-232 interface.

The interconnecting cable to the remote modem should not exceed **15.24 metres** (50 feet) in length, and must conform to the specification and wiring given below.



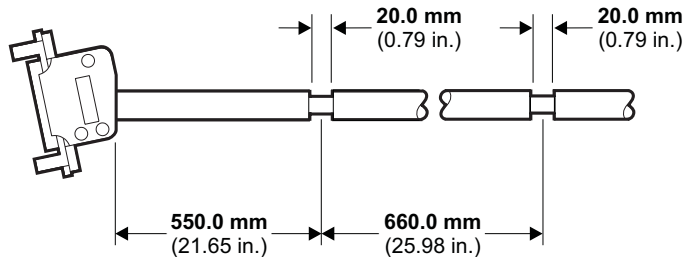


1. Connector, 25 way (NCR part no. 006-0005897).
2. Terminal wire, male (NCR part no. 009-0002642).
3. Cable, multicouductor (NCR part no. 007-8907033).
4. Connector (determined by remote device).
5. Shell hood (NCR part no. 006-1500038).
6. Screw retainer (NCR part no. 601-0101584).



At a point **550mm (21.65 in.)** from the connector end of the cable, remove a **20mm (0.79 in.)** section of the outer sleeve as shown. At a further **660mm (25.98 in.)**, remove another **20mm (0.79 in.)** section of the outer sleeve.

**Note:** Take care not to cut through the cable shielding when removing the outer sleeve.



## Remote Device Cables

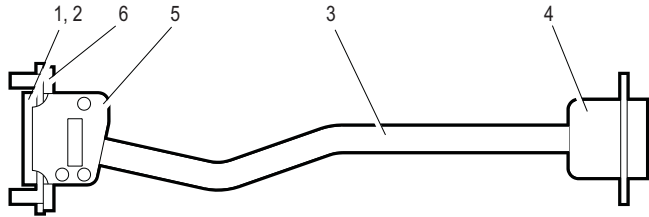
The specifications for these cables are supplied below.

### RS-232 Cable

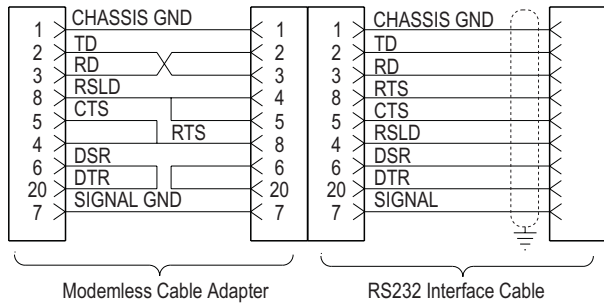
The ATM can have two RS-232 outlets either of which can be configured to provide an interface for one of two options:

- Remote camera
- Remote card access device.

For both options the cable is limited in length to **15.24 metres (50 feet)** and must conform to the specification and wiring given here.



1. Connector, 25 way (NCR part no. 006-0005897).
2. Terminal wire, male (NCR part no. 009-0002642).
3. Cable, multiconductor (NCR part no. 007-8907033).
4. Connector (determined by remote device).
5. Shell Hood (NCR part no. 006-1500038).
6. Screw retainer (NCR part no. 601-0101584).

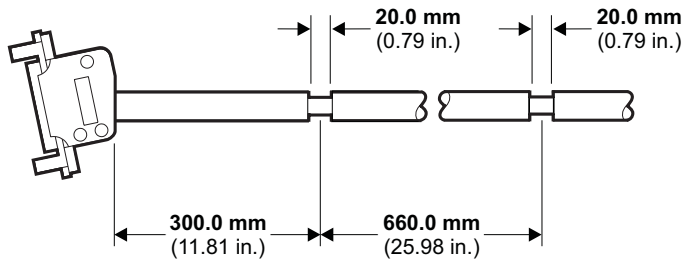


**Note:** The modemless cable adapter is supplied with RS-232 interface feature kits. This adapter performs crossover and linking normally associated with modemless operation. If this linking is not required, the modemless cable adapter may be removed and the RS-232 Interface Cable connected directly to the ATM.

Electrical Requirements  
Communications Requirements

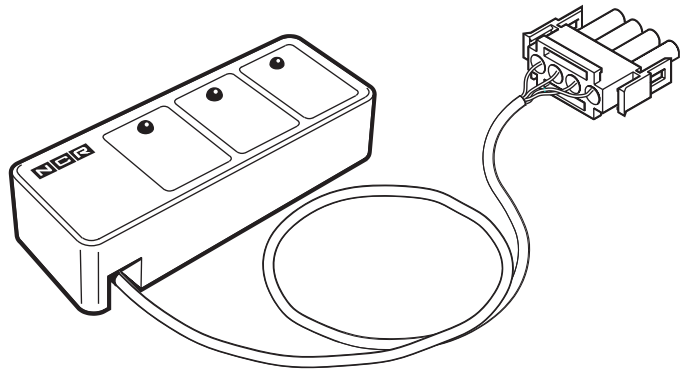
At a point **300mm** (11.81 in.) from the connector end of the cable, remove a **20mm** (0.79 in.) section of the outer sleeve as shown. At a further **660mm** (25.98 in.), remove another **20mm** (0.79 in.) section of the outer sleeve.

**Note:** Take care not to cut through the cable shielding when removing the outer sleeve.



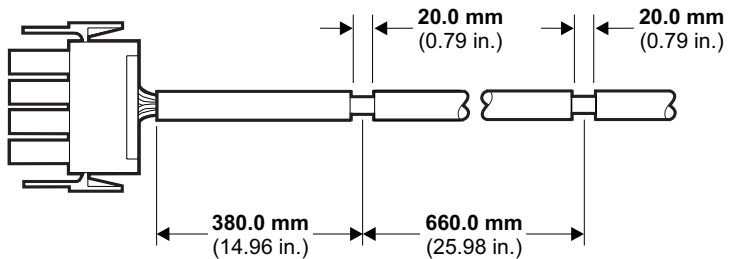
## Remote Status Monitor

The remote status monitor feature is supplied as a complete assembly and consists of a status indicator unit, **76.2 metres** (250 feet) of cable and a connector.



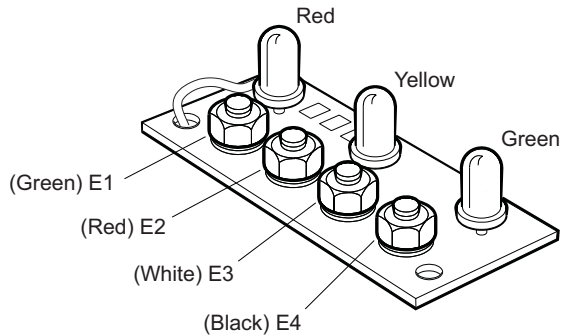
At a point **380mm** (14.96 in.) from the connector end of the cable, remove a **20mm** (0.79in.) section of the outer sleeve as shown. At a further **660mm** (25.98 in.), remove another **20mm** (0.79 in.) section of the outer sleeve.

**Note:** Take care not to cut through the cable shielding when removing the outer sleeve.



If you are required to shorten the cable, proceed as follows:

- 1 Remove the cover from the remote status indicator unit.
- 2 Disconnect the four leads from the indicator, that is E1, E2, E3 and E4.



- 3 Cut the cable to the required length and strip the four wire ends.
- 4 Connect the wires to the correct ATMs.
- 5 Replace the status indicator cover.

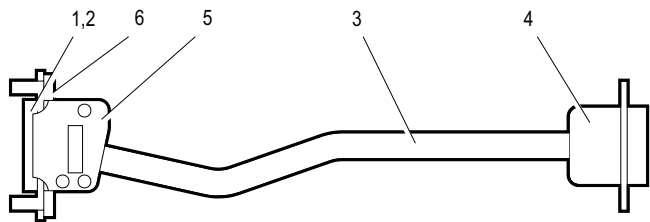
## Alarm Interface Cable

The ATM may optionally be configured to provide an alarm interface which enables the ATM to be connected to an external local alarm system. The interface may take the form of one of two options; a basic alarm system or an enhanced alarm system.

The external alarm system must provide to the ATM, through the alarm interface cable wiring, a non interruptable, stabilised power supply with the following specifications:

- 12V +- 2V dc
- 200mA maximum
- Ripple, 5% maximum.

The interconnecting cable to the ATM is similar for both alarm interface options and must conform to the following specification and wiring:

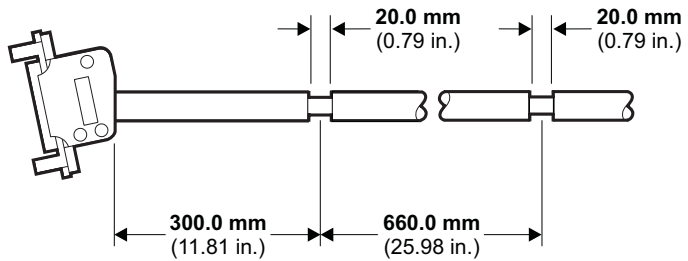


1. Connector, 25 Way (NCR part no. 006-0005896)
2. Terminal, wire, female (NCR part no. 009-0002640)
3. Cable, multiconductor (determined by the alarm installed).
4. Connector (determined by remote device).
5. Shell Hood (NCR part no. 006-1500038).
6. Screw retainer (NCR part no. 601-0101584).

Electrical Requirements  
Communications Requirements

At a point **300mm** (11.81 in.) from the connector end of the cable, remove a **20mm** (0.79in.) section of the outer sleeve as shown. At a further **660mm** (25.98 in.), remove another **20mm** (0.79 in.) section of the outer sleeve.

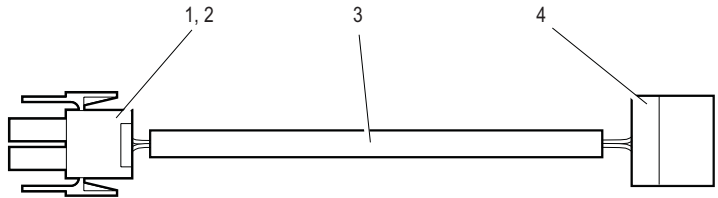
**Note:** Take care not to cut through the cable shielding when removing the outer sleeve



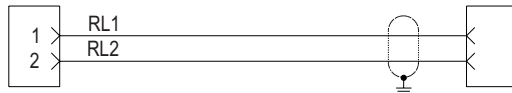


## Remote Relay Cable

The remote relay provides a pair of open contacts, rated at 28 volts per ampere for both ac and dc supplies, which can be closed to activate a remote device. The interconnecting cable to a remote device must conform to the following specification and wiring:

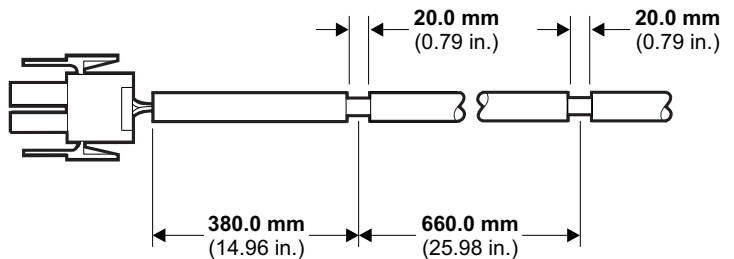


1. Connector, 2 way Mate-N-Lock (NCR part no. 007-9814285).
2. Terminal wire, male (NCR part no. 007-2009663).
3. Cable, multiconductor (NCR part no. 006-5800006).
4. Connector (determined by remote device).



At a point **380mm (14.96 in.)** from the connector end of the cable, remove a **20mm (0.79in.)** section of the outer sleeve as shown. At a further **660mm (25.98 in.)**, remove another **20mm (0.79 in.)** section of the outer sleeve.

**Note:** Take care not to cut through the cable shielding when removing the outer sleeve.



Electrical Requirements  
**Communications Requirements**

Chapter 3

# Environmental Requirements

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Table of Contents  
**Environmental Requirements**

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# Environmental Requirements

For the ATM to function correctly the site at which it is to be installed should meet the following environmental requirements.

## Temperature And Humidity

The ATM will operate over a range of temperature and humidity. However, continuous operating at or near the range limits or in a location where the temperature and humidity change beyond the specification, should be avoided. The temperature and humidity ranges are as follows:

### Normal operating range (interior to wall environment):

- Temperature: **10°C to 40°C** (50°F to 104°F)
- Temperature change rate: **10°C/hour** (18°F/hour)
- Relative humidity: 20% to 80%
- Relative humidity change rate: 10%/hour
- Dew point temperature restriction: **26°C** (79°F) maximum.

**Note:** The humidity inside the building is restricted to a maximum of 30% at an outside temperature of **-35°C** (-31°F) with a linear (straight line) relationship between temperature and humidity to a maximum humidity of 80% at **0°C** (32°F)

### Normal operating range (exterior to wall environment):

- Temperature: **-35°C to 50°C** (-30°F to 122°F)
- Temperature change rate: **10°C/hour** (18°F/hour)
- Relative humidity: 10% to 100%
- Relative humidity change rate: 10%/hour.

### Normal operating range (exterior to wall environment when passbook fitted):

- Temperature: **0°C to 50°C** (32°F to 122°F)
- Temperature change rate: **10°C/hour** (18°F/hour)
- Relative humidity: 10% to 80%
- Relative humidity change rate: 10%/hour.

**Storage range (up to three months):**

- Temperature: **-10°C to 50°C** (14°F to 122°F)
- Temperature change rate: **15°C/hour** (27°F/hour)
- Relative humidity: 10% to 90%

**Transit range (up to one week):**

- Temperature: **-40°C to 60°C** (-40°F to 140°F)
- Temperature change rate: **20°C/hour** (36°F/hour)
- Relative humidity: 5% to 95%

**Extreme power on range (up to one hour):**

- Temperature: **0°C to 40°C** (32°F to 104°F)
- Temperature change rate: **10°C/hour** (18°F/hour)
- Relative humidity: 10% to 95%.

**Barometric Pressure**

Barometric pressure details are as follows:

- Operating and transit limits: **105kPa** (15.2 lb. F/in.)
- Equivalent altitude: up to a maximum of **3000 metres** (9842 feet).

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## Electromagnetic Compatibility (EMC) and Safety

The ATM complies with the following standards and directives:

### **EMC Directives**

- 89/336/EEC “EMC Directive”
- 92/31/EEC “Amending EMC Directive”
- 73/23/EEC “Low Voltage Directive”
- 93/68/EEC “CE Marking Directive”.

**The Harmonised EMC Standards are as follows:**

### **Emission Standards**

Radiated and Conducted:

- EN 55022 (1995) Class A
- FCC CFR 47 Part 15 Sub J Class A.

Conducted:

- EN61000-3-2 (latest revision) Mains Harmonics (Class A)
- EN61000-3-3 (latest revision) Mains Flicker.

### **Immunity Standards**

- EN 55024 (1997) “ITE Immunity Standard”.

**The Harmonised Safety Standard is as follows:**

### **Safety Standard**

- EN 60950 “Safety of IT Equipment”.

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## Acoustics

### **Sound Power**

- 65 dB(A) idle
- 68 dB(A) operating.

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## Heat Dissipation

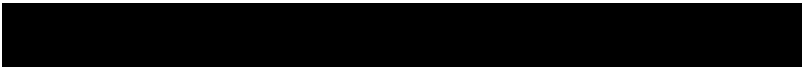
The heat dissipation of the ATM is **1580kJ/hour** (1500 BTU/hour) maximum.

Environmental Requirements  
**Environmental Requirements**

**Air Flow** The air flow through the ATM is rated at **0.1 m<sup>3</sup>/s**  
(212 ft<sup>3</sup>/min.).

**Temperature Rise** The temperature rise for air passing through the ATM is **3°C** (5.4°F).





Chapter 4  
**Decals**

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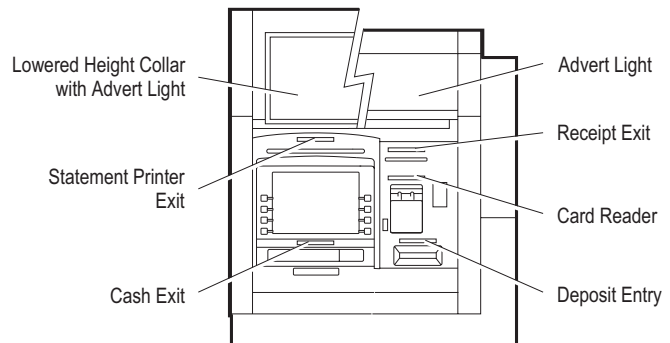
Decal Dimensions	4-1
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Card Acceptance Decal	4-3
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Standard Collar with Advert Light	4-4
Lowered Height Collar	4-4
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**Decals**

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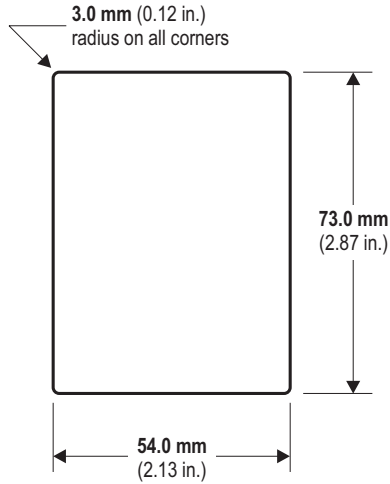
# Decal Dimensions

The following illustrations provide the specifications and locations for the decals which you may wish to fit to the front of your ATM.



## Card Orientation Window

If the window next to the Card Reader entry/exit slot is to be customised to indicate card orientation, the card/decals to be inserted into the window should be of the following dimensions.



The insert should be a maximum of **0.75 mm (0.029 in.)** thick.

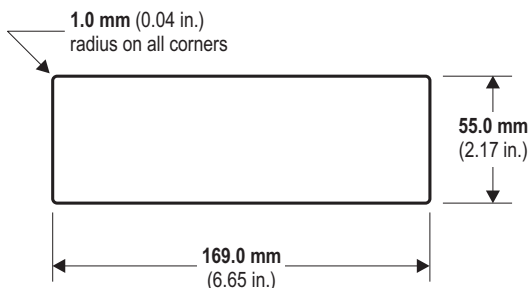
If the front of the ATM is to be in a place where it is likely to be subjected to rain, it is recommended that the decal not be made of an absorbent material.

## Card Acceptance Decal

If a decal is required to advertise which cards can be used in the ATM, it should be positioned onto the ATM sleeve, next to the facia. The decal can be any size, providing it fits onto the sleeve area.

## Clear Window

If a depository feature is not configured, then the front of the deposit blank moulding will have a large clear window. If an insert is to be made to go behind the window it should be of the following dimensions.



The insert should be a maximum of **0.8 mm** (0.03 in.) thick. NCR recommend that the insert be made from one of the following materials:

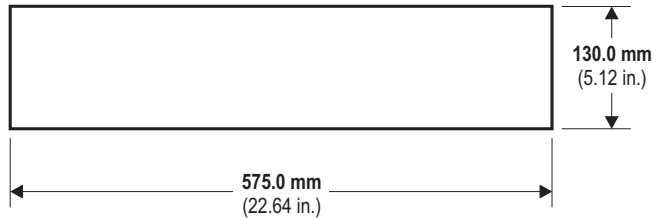
- Polycarbonate
- Polyester
- Paper.

**Note:** Paper is not recommended if the front of the ATM is to be in a place where it is likely to be subjected to rain.

### Standard Collar with Advert Light

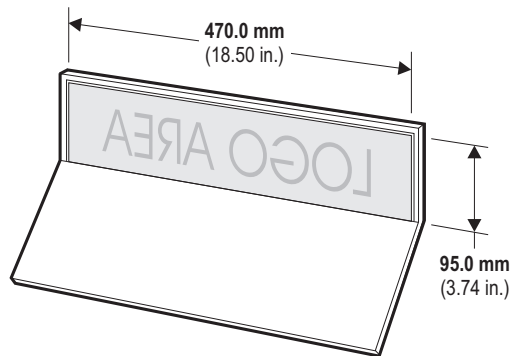
The ATM will have provision for an advert light on the collar area. The following illustration shows dimensions for an advert light decal. These dimensions are based on a decal being applied to the flat inside area of the advert light panel.

**Note:** The decal is the same size as used on 5684 advert lights.



### Lowered Height Collar

If the ATM is to be installed to comply with the UK Design Guidelines, a larger advert light panel will be supplied with the ATM. The following illustration shows dimensions for a decal. These dimensions are based on a decal being applied to the **vertical** surface area on the inside of the advert light panel.



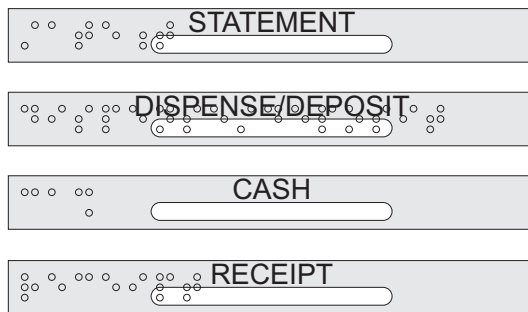
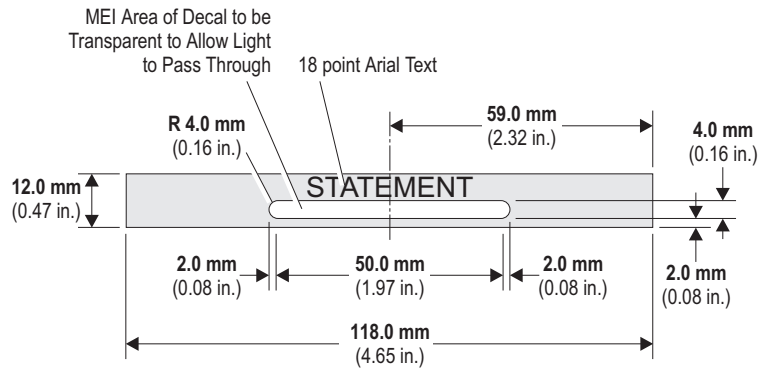
**Note:** To allow sufficient illumination of the customer interface, it is recommended that only the area indicated should be covered by any advert or logo.

The materials used for the facia light decal will depend on the process being used to apply the decal.

## Entry/Exit Slot Decals

The front of the ATM has been provided with recesses for decals to identify the entry and exit slots. The following are guidelines to their sizes and design although financial institutions may wish to design their own. The decals should be a maximum of **0.5 mm** thick and it is recommended that they be made from Textured Polycarbonate with 3M 467 High Performance MP adhesive.

**Note:** A combination of your application and screen graphics can be used as an alternative to indicate the cash/media exit slot.



Decals  
**Decal Dimensions**





Chapter 5  
**Installation Accessories And  
Planning Check List**

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Installation Accessories 5-1

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Planning Check List 5-3

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**Installation Accessories And Planning Check List**

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# Installation Accessories

When installing your ATM it is recommended that you have the following items available:

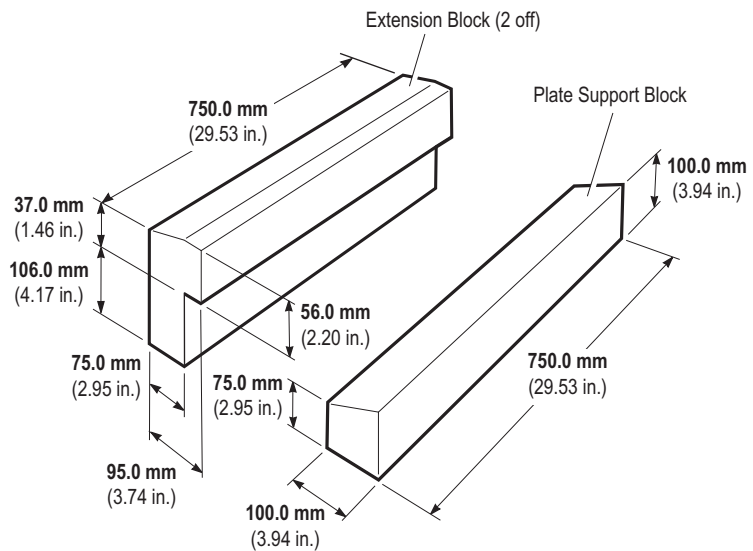
- Pincers/claw hammer to remove staples/nails from around the air/sea pallet
- Small crosshead screwdriver
- Pozi drive screwdriver
- Small flat blade screwdriver
- Hacksaw - only required to configure passbook printer
- To fit fixing bolts; a **19 mm** (3/4 in.) ring/open-ended combination spanner and socket are required for a UL safe, a **27 mm** (1 1/8 in.) socket with a maximum outside diameter of **33 mm** (1 5/16 in.) is required for a CEN Grade III or Spanish Special Security enclosure
- **17 mm** (11/16 in.) ring/open-ended combination spanner or socket - only required if the transportation feet are to be removed
- **4 mm** (7/64 in.) Allen key to fit the collar around the fascia
- **2 mm** Allen key to fit the standard or advert fascia light
- **7 mm** (9/32 in.) ring/open-ended combination spanner or socket to fit the standard or advert fascia light
- Lifting/moving device
- Wooden/metal safety blocks to support the ATM during installation - required for removing transportation feet
- Packing to protect the exterior of the ATM while on a trolley.

If you are using a pair of lifting trolleys to remove an ATM from an air/sea shipping pallet, you will require the following items:

- Two pallet extension blocks (see following figure)
- A plate support block (see following figure)
- A metal ramp plate.

The dimensions of the ramp plates are as follows:

- Length **750mm** (29.53in.)
- Width **750mm** (29.53in.).



# Planning Check List

To assist you in preparing your site for the arrival of your ATM we provide here a check list of the various procedures that you should carry-out **prior** to the arrival of your ATM. The procedures given are listed in chronological order, starting with the procedure that you should do first.

<b>Activity</b>	
Select site and make scaled floor plan	
Ensure correct environmental conditions	
Establish all contractor and vendor related schedules	
Check communication line requirements	
Plan application development	
Check floor plan and make any alterations	
Install additional electrical outlets (if required)	
Prepare site for data communication	
Arrange for designing and printing of overlays/ decals	
Order technical publications	
Order media supplies	
Plan operator training (optional)	
Ensure data comms. equipment is installed and tested	
Ensure installation accessories listed in Attachment D are available	

Installation Accessories And Planning Check List  
**Planning Check List**



Appendix A  
**Transient Protection**

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AC Power Line Transient Protection	A-1
Data Line Transient Protection	A-4

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**Transient Protection**



# AC Power Line Transient Protection

In the process of power distribution, transient electrical energy (including, but not limited to, lightning strikes, intermittent short circuits, and switching transients) can be introduced on to power lines. Such transient energy can be very damaging to electronic hardware and can also cause data corruption. Under these circumstances, NCR recommends the use of ac power transient suppressors and data (communication) line transient suppressors. Such protective devices are intended to guard against power and data line transients that can result in hardware damage and various system or program errors.

Improvement of any deficiencies in power quality is a customer responsibility. Malfunction and/or component failure as a result of power quality problems are/is not covered by NCR Maintenance Agreement, NCR accepts no liability for any such occurrence nor for its consequences.

When power transient suppression is required, the suppressors used should meet the following minimum requirements:

- Dissipate energy to match the appropriate application categories as defined by IEEE Standard 587. These categories are described in the table below:

Location Category	Comparable to IEC No 664 Category	Transient	
		Waveform	Amplitudes
A=Outlets > <b>10 m</b> (30 ft) from Cat. B A= Outlets > <b>20 m</b> (60 ft) from Cat. C	II	0.5 $\mu$ s Risetime, then 100 kHz Ringwave, each peak=60% of previous	6 kV 200A
B=Major feeders, short branch circuits, and load centres	III	Volts=1.3 x 5 $\mu$ s Current= 8 x 20 $\mu$ s and 0.5 $\mu$ s Rise = 100 kHz Ringwave	6kV 3kA 6kV 500A
C = Service Entrance and run to load centre	IV	Volts = 1.2 x 5 $\mu$ s Current = 8 x 20 $\mu$ s	10kV or more 10kA or more

- Be of the voltage limiting (clipping), or tracking filter type. The suppressor must not ‘clamp’ the voltage to zero, and must self-recover after passage of the transient. The suppressor may be of the hybrid type construction that makes use of various technologies in order to meet speed and dissipation requirements.

- Exhibit a 'short circuit' mode upon its failure, thus providing a positive indication of its failure such as a blown fuse or tripped breaker
- Be listed by the accepted safety organization for the country involved (e.g. UL, CSA, VDE, ETL, etc.) and the installation must conform to local, state, and national electrical codes and regulations.

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## Data Line Transient Protection

The nature of the transient phenomenon may extend to the data communication lines connected to this equipment. It is the responsibility of the customer to install and connect a data line transient suppression system to correct or prevent any deficiencies. Such systems must meet the following minimum requirements:

- Be of the voltage limiting type and must self-recover after passage of the transient
- Exhibit a 'short circuit' mode upon its failure to insure a positive indication of its failure
- Insert less than 5 ohms resistance and minimal inductive and capacitive loading at the operating frequency, in each data line in order to avoid signal degradation
- Be installed in accordance with all applicable local, state, and national electrical codes and regulations.

**Note:** In certain countries, NCR is able to supply both power and data line transient suppressors as well as a comprehensive line of power conditioning equipment. For application data, contact your NCR Customer Services Division Representative.



**Appendix B**  
**Power Protection**

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Uninterruptible Power Supplies	B-3
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**Power Protection**

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# NCR Power Protection and Cabling products

Power protection equipment suitable for use with NCR ATMs can be purchased from the NCR Power Protection and Cabling group. Some of these products are outlined below.

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## AC Power Line Transient Protection

The following products can be purchased from the NCR Power Protection and Cabling group to help provide protection from power line spikes and surges:

NCR Product ID	Description
4060-4030-0094	110V, 3 outlet, wall plug-in, 15 Amp suppressor, United States applications
4060-4050-0094	110V, 3 outlet, strip, 15 Amp suppressor with <b>1.8 metres</b> (6 feet) of power cable, United States applications
4060-4070-0094	110V, 7 outlet, strip, 15 Amp suppressor with <b>1.8 metres</b> (6 feet) of power cable, United States applications
4060-4310-7594	220V, 4 outlet, strip, United Kingdom plug fitted
4060-4311-7594	220V, 4 outlet, strip, German/European plug fitted
4060-4312-7594	220V, 4 outlet, strip, French plug fitted

These products have numerous features:

- unique five-stage hybrid circuitry
- offers protection from spikes and surges
- protection covers all modes - line to neutral, line to earth (ground) and neutral to earth (ground)
- integral RF/EMI damping capability
- thermal overload protection
- high capacity fusing
- indicator lights display operational readiness
- plastic housing is highly flame retardant, conforming to UL94-5V.

## Data Line Transient Protection

The following Data Line Transient Voltage Surge Suppressors can be purchased from the NCR Power Protection and Cabling group to help protect the communications port against harmful transient surges from both external and internal sources not eliminated by Uninterruptible Power Supplies or other AC protection:

NCR Product ID	Description
4060-K018-V000	25 pin, CMP, snaps in to United States surge suppressors
4060-K019-V000	25 pin, CFP, snaps in to United States surge suppressors
4060-K021-V000	25 pin, CMP, stand-alone, all applications
4060-K022-V000	25 pin, CFP, stand-alone, all applications

**Note:** The first two products are designed to snap-in to the interface port on NCR Series 4000 Transient Voltage Surge Suppressors in the United States. The second two products are designed to be stand-alone for use in Europe.



## Uninterruptible Power Supplies

Uninterruptible Power Supplies (UPS) can be purchased from the NCR Power Protection and Cabling group to help protect information and equipment by providing power conditioning and battery back-up.

NCR Product ID	Description
4081-1000-7194	1000 VA on-line UPS with rack/tower configuration, 120VAC 50/60 Hz
4081-1000-7494	1000 VA on-line UPS with rack/tower configuration, 230VAC 50/60 Hz

These products offer:

- on-line topology
- 10 minute battery backup at full load
- true sine wave output
- 100% clean, conditioned power to connected equipment
- extended battery cabinets available for extended run times
- on-board SNMP optional on all models
- standard LAN/serial (RS-232) network interface
- standard rack-mountable unit design
- also available in 1500 VA, 2100 VA and 3000 VA sizes.

<b>NCR Product ID</b>	<b>Description</b>
4071-1000-7194	1000 VA Enhanced line-interactive UPS, 120VAC 60 Hz
4071-1001-7194	1000 VA Enhanced line-interactive UPS, 120VAC 60 Hz, Rack-mountable
4071-1000-7494	1000 V A Enhanced line-interactive UPS, 230 VAC, 50/60 Hz
4071-1001-7494	1000 V A Enhanced line-interactive UPS, 230 VAC, 50/60 Hz, Rack-mountable

These products offer:

- line-interactive topology
- 8 minute battery backup at full load
- true sine wave output
- input voltage selectable to 110/127 VAC or 220/240 VAC
- advanced battery management prolongs battery life and ensures quick availability after discharge
- advanced battery management for early failure detection and advanced user warning
- internal transformer provides voltage buck/boost
- standard LAN/serial (RS-232) network interface
- available in rack-mountable configuration
- also available in 600VA, 1500VA, 2000VA, 2200VA sizes.

<b>NCR Product ID</b>	<b>Description</b>
4070-1000-7194	1000 VA Line-interactive UPS, 120AC, 60 Hz
4071-1000-7494	1000 VA Line-interactive UPS, 230VAC, 50/60 Hz

These products offer:

- line-interactive topology
- 7 minute battery backup at full load
- modified sine wave output
- input voltage selectable at 110/127 VAC or 220/240 VAC
- advanced battery management prolongs battery life and ensures quick availability after discharge
- advanced battery management for early failure detection and advanced user warning
- internal transformer provides voltage buck/boost
- standard LAN/serial (RS-232) network interface
- hot-swappable batteries
- also available in 450 VA, 700 VA, 1500 VA sizes.

**Contact information**

For more information from NCR's Power Protection and Cabling Group on the power protection, data line transient suppressors and uninterruptible power supply products available, warranty or configuration assistance, call the appropriate number below:

<b>Telephone</b>	
Worldwide (excl. USA)	+1 919 460 9489
USA only	1 800 257 0458

<b>Facsimile</b>	
Worldwide	+1 919 460 9653 or +1 919 460 8976



Appendix C  
**Infill Panel**

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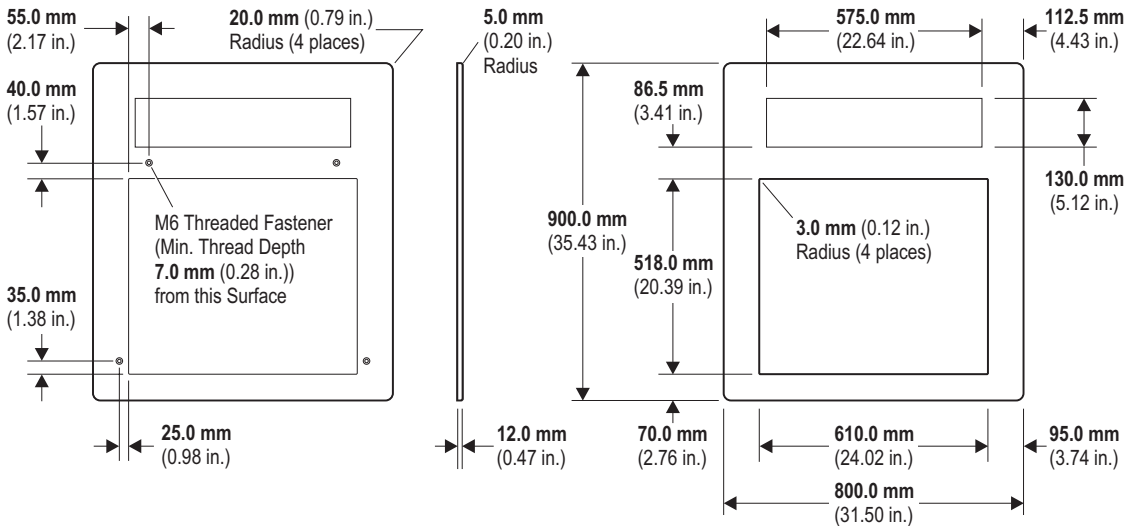
Infill Panel Dimensions	C-1
Standard Infill Panel	C-1
“Lowered Height” Infill Panel	C-2

Table of Contents  
**Infill Panel**

# Infill Panel Dimensions

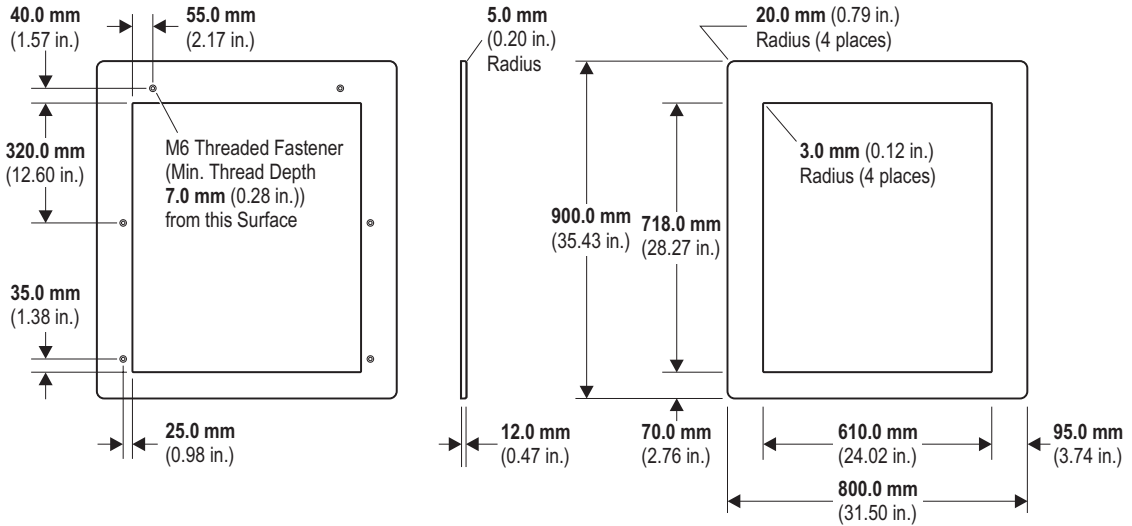
Customised infill panels, made by owning organisations, should use the following dimensions as a guide:

**Standard Infill Panel** For a standard infill panel, use the following dimensions:



Infill Panel  
Infill Panel Dimensions

For a “Lowered Height” infill panel, use the following dimensions:  
“Lowered Height”  
Infill Panel







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