Smart Bin

Architect Information Pack

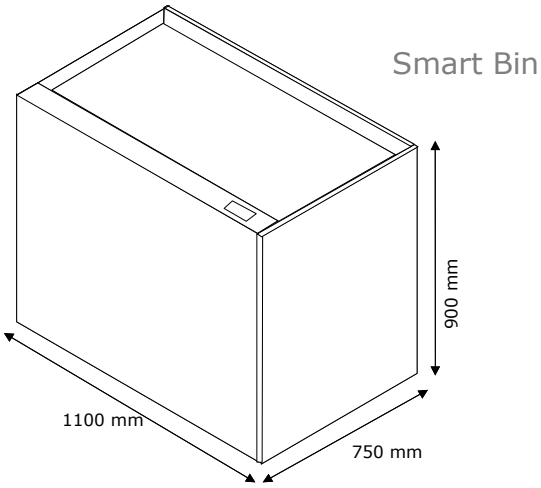
FE TECHNOLOGIES

Table of Contents

SYSTEM FEATURES 3
DETECTION ZONES 3
EXCLUSION ZONES 3
WALL EXCLUSION ZONE 6
PHYSICAL DIMENSIONS AND INSTALLATION 6
SYSTEM SPECIFICATIONS 7
Power point 7
Network connection 7
Environmental specifications 7
INSTALLATION REQUIREMENTS 7
Clearances 7
Levelling 8
System layout considerations 8
INSTALLATION RESPONSIBILITIES 8
The library's responsibilities 8
FE Technologies' responsibilities 8

I

System features



The Smart Bin Returns System is a unique multiple-item return solution. Items dropped into the bin are automatically checked-in and their sorting condition stored locally. The Smart Bin should be installed where there is currently a Sort Assistant. When the item is subsequently placed on the Sort Assistant pad, the system advises the user what to do with the item (for example, shelve, on hold for a patron, return to another library and so on). Please refer to the Sort Assistant Architect Pack for further information on this product.

Detection zones

The following minimum requirements must be met to ensure optimal performance. The antenna can detect items in the bin, as well as above the bin to 300mm, and all around the bin up to 400mm. The bin will automatically check in items in this region.
It is important to make sure that items that should not be processed by the bin are not inadvertently brought into the detection zone, so libraries should be mindful of installing the unit close to thin walls, for example.

Exclusion zones

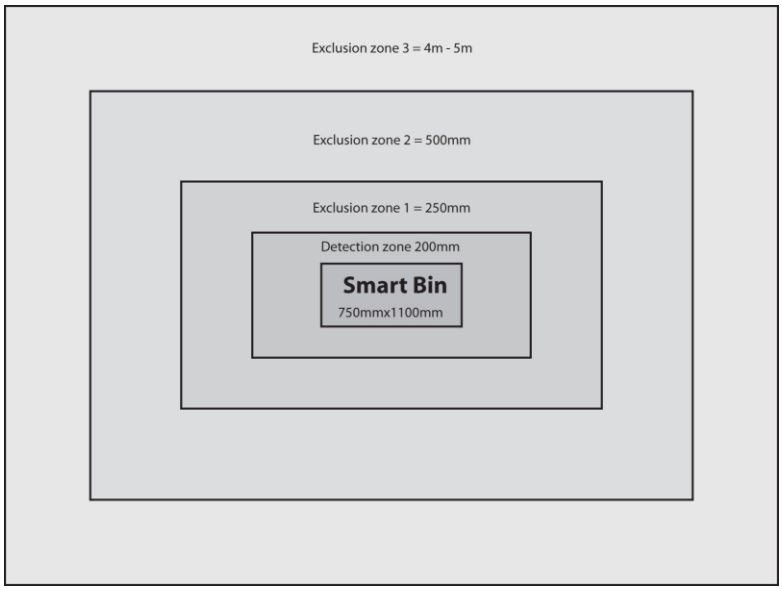
- **Exclusion zone 1 (250 mm):** in this zone there should be no metal beams, frames or studs (this includes metal studs inside dry walls, windows or doors with metal frames,

I

metal framed shelving, large picture frames, counter edges, wastebaskets and furniture).

NOTE: An integrated RFID secure external return chute can be installed within the exclusion zone provided it is installed in accordance with its Architect pack.

- **Exclusion zone 2 (500 mm):** in this zone there should be no large metal objects (windows or doors with metal panels, display cases, shelves, cabinets, planters, wastebaskets or furniture), structures that form an electrically conductive loop, such as a metal counter edge and metal picture frames, any RFID equipment that reads or programs RFID tags, such as Sort Assistant pad readers, Circulation Assistant pad readers, RFID conversion stations, RFID enabled single book return chutes and Self Loan Stations or other large electronic equipment, such as printers, fax machines and CRT monitors or workstations, computer systems, photocopy machines, printers and other office equipment.
- **Exclusion zone 3 (4 – 5 m):** in this zone there should be no other high power RFID tag reading/detection systems, such as another Smart Bin or security gate system.



NOTE: In some instances, additional RF shielding panels may be required, depending on the environment of the library. If these panels are required, additional cost will be incurred. Typical additional cost to fit RF panels is 8 to 10 hrs of labour plus travel.

Two Smart Bins may be installed close together. However, they need to be synchronised together. This means that the two bins will act as one combined unit.

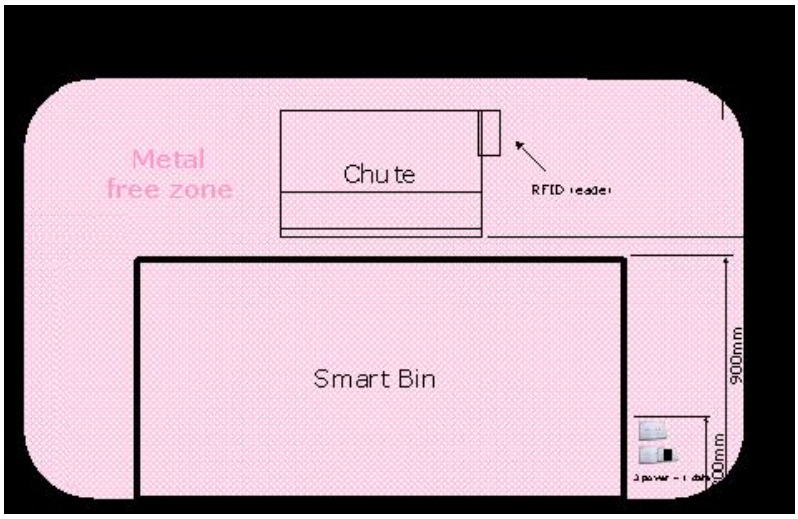
I

Exclusion zones are measured from the edge of the bin.

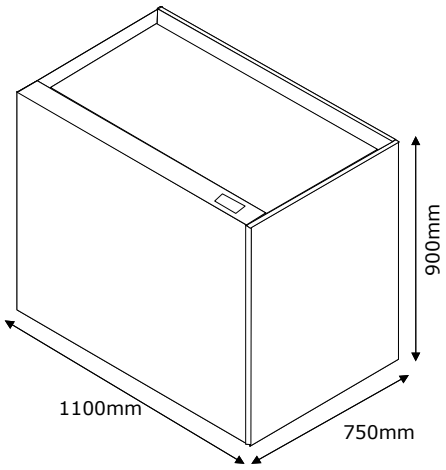
I

Wall exclusion zone

The wall close to the bin must be free of metal frames and studs in the exclusion area shown in pink in the image below.



Physical dimensions and installation



The standard bin is 1100mm wide by 750mm deep and 900mm high. Its ideal position is with its long edge against the wall, with the chute at a central position. A workbench with its top at 900mm, butted against the short edge, will form an ideal returns processing station, with the Sort Assistant located on the workbench with the RFID pad, about 500 mm to a metre away from the bin.

I

System specifications

Compliance with the following specifications will help ensure that the system performs as designed.

Power point

The electronic bin requires a surge- and noise-free electrical power connection with a suitable isolator switch. Power entry is via an entry hole on the right or the left side of the bin.
Power input: 240 V AC 50/60 Hz, 2.5 A max.
Power usage under full load: 210W (28W on standby)
The power cable is 1600mm.

Network connection

A network connection is required for the Smart Bin, which also uses a static IP address. The network cable connects to the bin on the same side as the power connection.
The Sort Station requires a network, but does not need a static IP address.
The total wire-run length of network cable must not exceed the 100m maximum imposed by the Ethernet standard.
The network cord is 2300mm.

Environmental specifications

Operating/storage temperature: 0° C to 50° C.
Operating/storage humidity: 0% to 85 % (relative humidity, non-condensing).

Installation requirements

All exclusion zones (as described elsewhere in this document) must be maintained.

Clearances

If a processing table is placed close to the bin, it should not have any metal edges or frames that form a closed loop. Any such closed loop needs to be cut with a gap of at least 5mm. The servicing of the electronic components of the bin is done via the front service panel and should be easily accessible.

I

Levelling

The floor in the area of the bin's footprint must be level.

System layout considerations

To facilitate installation and system maintenance, clearance around the system must be at least 500mm from immovable object.

Installation responsibilities

The library's responsibilities

The library is responsible for the following provisions:

Installing space

The library is responsible for constructing a suitable space for installation, as well as for receiving and locating the bin to within 3m of the installation site.

Electrical connection

Approved electrical wiring, fuse boxes, junction boxes, AC electrical outlets or conduits, connection bushings and associated wiring required to provide noise-free, reliable electrical power to the system (as specified in the power specifications section) must be installed in compliance with applicable building and electrical codes.

Network connection

A Cat5e or better network connection (as specified in the network connection specifications section) must be installed in compliance with applicable building and electrical codes.

FE Technologies' responsibilities

The FE Technologies' RFID technician is responsible for the following provisions.

I

Installing the chute

FE Technologies is responsible for connecting the Smart Bin, installing the RFID components and all inter-connections, commissioning the system, including any tuning of the RFID system, as well as programming the system to work with the library's RFID tags.

FCC ID: 2AM6N-FE-SMRTBIN

FCC Compliance

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.

Warning: Any changes or modifications not expressively approved by FE Technologies could void the user's authority to operate this equipment.

I