



IMPROX DBv

ImproX (DBv) Vertical Mount Drop Box INSTALLATION MANUAL

SPECIFICATIONS

Read/Write Capability	Impro Tags: All standard ImproX Credit Card Tags, with or without the slot and clip. Third-party Tags: Read only capabilities on selected third-party Credit Card Tags.	
Working Environment		
XDB902-1-0-GB-XX	Mounted in a suitably rated, user supplied cabinet; the Drop Box is designed to work in an indoor or outdoor environment similar to IP54.	
XDB903-1-0-GB-XX	The Drop Box is designed to work in an indoor or outdoor environment similar to IP66.	
Input Voltage	12 V DC, polarity sensitive.	
Power Requirements		
Input Voltage 12 V DC	Current (mA)	Power (W)
Solenoid OFF.....	45	0.54
Input Voltage 12 V DC		
Solenoid ON.....	800	9.60
Solenoid		
Input Voltage.....	12 V DC.	
Type	Push, pull action.	
Relays		
Relay Output	2 Relays each with NO, COM and NC contacts.	
Relay Allocation		
Relay 1	Factory configured to drive the Solenoid when a Tag is inserted and read inside the Drop Box.	
Relay 2	User configured to control hardware at the exit point (typically a boom, vehicle gate or turnstile).	

Relays (Continued)

Relay Contact Ratings 3 A at 24 V DC or 125 V AC.
1.5 A at 220 V AC.

Digital Inputs

Type 4 Dry-contact inputs.
Protection Range +50 V to -50 V continuous,
+80 V to -80 V surge.

LED “Diagnostic Indicators”

Status LED

Power On..... Continuous Red.
Upgrade Mode..... Flashing Red (Steady).
RS485 Communications
Failure Flashing Red (Intermittent).
Incoming RS485 Data Flashing Green LED.
Outgoing RS485 Data Flashing Red LED.
Digital Inputs (1-4)..... Continuous Green on detected contact
closure.
Relays (1 and 2)..... Continuous Red on activation of the Relay.

Blank Space

INSTALLATION INFORMATION

Accessories

Find the following when unpacking the ImproX DBv:

NOTE: *The ImproX TD included in the construction of the ImproX DBv uses the standard ImproX TT Hardware, with modified Firmware. The ImproX TD will NOT, however, operate as an ImproX TT.*

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NOTE: *This version of the Drop Box does NOT include a Tag Retention Box for catching the Tags.*

- An ImproX Vertical Mount Drop Box with an open frame construction. The Drop Box includes a 1 m (7 ft) twisted, black, 0.5 mm, 2-Conductor Power Cable.
- A Mechanical Drilling and Cutting Template.
- Two Fixed Address Labels.

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- An ImproX Vertical Mount Drop Box with a white powder coated mild steel Cabinet. The Drop Box Cabinets design includes a Tag Retention Box for catching the Tags. The Drop Box Throat Assembly includes a 1 m (7 ft) twisted, black, 0.5 mm, 2-Conductor Power Cable.
- One mild steel Mounting Bracket.
- Two Keys.
- Two PG7 Plastic Cable Glands.
- One M10 Rawl Bolt.
- Two Fixed Address Labels.

General

Remember the following when installing the ImproX DBv:

Communications Distance

The RS485 communications distance between the ImproX Controller and the LAST ImproX unit in a cable run, MUST NOT exceed 1 km (1 090 yd). Achieve this by using good quality screened, twisted 2-pair cable, with the screen EARTHED at one end.

Jumper Links

Long transmission lines or multiple “star” connections, may cause communication problems. Placing a Jumper Link across the jumper [TR1] in the LAST UNIT AT THE END OF THE CABLE RUN should solve the problem.

EARTH Connection

Connect the Drop Box to a good EARTH point. Using the RS485 Port, connect the EARTH Lead to the ‘⌋’ Terminal. Mains EARTH can be used, but electrical noise may exist.

Drop Box Connection

Distance between Drop Boxes

To avoid mutual interference, install the Drop Boxes alongside each other at least 500 mm (20 in) apart.

Antenna Reader Connection

Antenna Reader Distance

As the Drop Box makes use of the connections to “Reader 1”, “Reader 2” is available for connection to any ONE of the available Antenna Readers.

The ideal cable distance between the Drop Box and its Antenna Reader ranges between 2 m to 16 m (7 ft to 53 ft). Achieve this by using good quality screened, twisted pair cable.

Distance between the Antenna Reader and the Drop Box

To avoid mutual interference, install the Antenna Reader and the Drop Box alongside each other at least 150 mm (6 in) apart.

Distance between Antenna Readers from DIFFERENT Drop Boxes

To avoid mutual interference, install the Antenna Readers alongside each other at least 500 mm (20 in) apart.

Arc Suppression

Snubber devices are recommended for EMF Flyback and Arc Suppression when driving an inductive load with the Relay, see Figure 1.

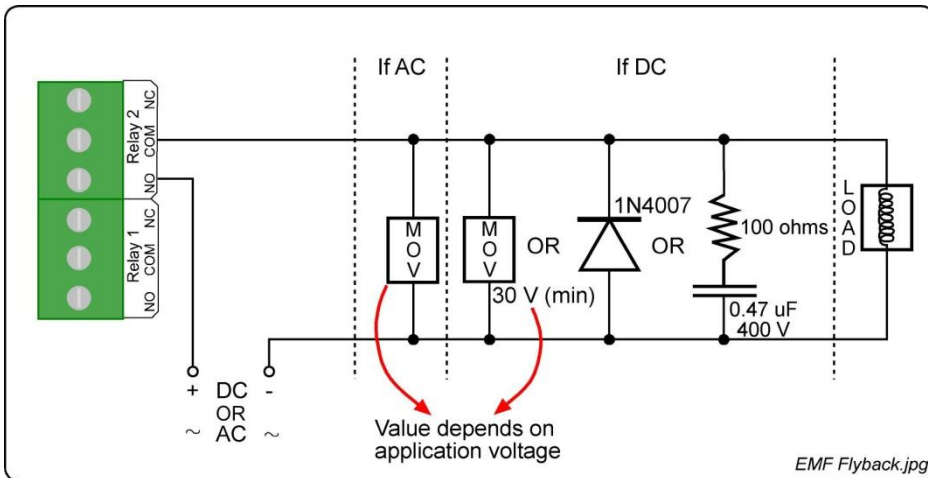


Figure 1: EMF Flyback and Arc Suppression

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Mounting the Drop Box

CAUTION: Make certain that you mount the Drop Box on a vibration-free surface.

NOTE: The Drop Box can be mounted against virtually any surface, including metal, a maximum of 25 mm (0.98 in) thick.

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Mount the Drop Box against the side of a counter taking into consideration any security issues, accessibility, routing of wires and visibility of the “Diagnostic Indicators”. The Front Mouth Plate is mounted on the outside of the counter and the Throat Assembly is mounted on the inside of the counter.

CAUTION: Make allowance, during installation, for the Tag Retention Box. Ensure that the Tag Retention Box does NOT restrict the Tags from dropping out of the Drop Box.

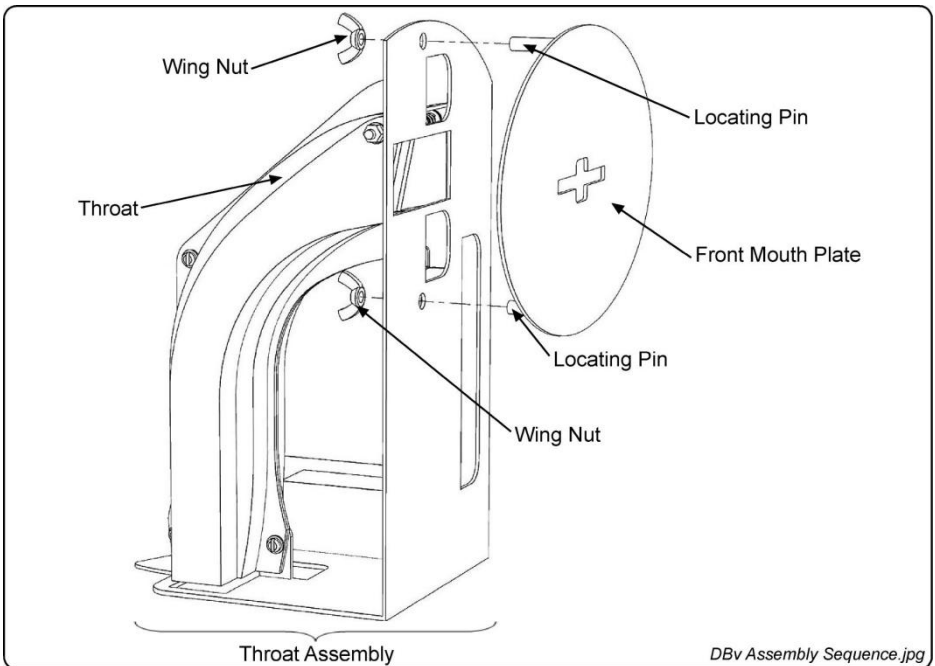


Figure 2: Sequence of Assembly

1. Mark out, drill and cut according to the indications on the Mechanical Drilling and Cutting Template.
2. Connect the Drop Box as per Figure 4.
3. Place the Front Mouth Plate into position, using the Locating Pins on the back of the Front Mouth Plate for correct location.
4. Slide the Throat Assembly from inside the counter onto the two Locating Pins, and tighten using the Wing Nuts supplied.

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Mount the Drop Box in a suitable location on a cement slab. Take into consideration any security issues, accessibility, routing of wires and visibility of the “Diagnostic Indicators”.



Figure 3: Tag Retention Box Position

1. Position the Mounting Bracket inside the base of the Drop Box.
2. Mark out and drill the mounting hole.
3. Fix the Drop Box into position (using the Mounting Bracket and M10 Rawl Bolt).
4. Remove the Face Plate Assembly (including the Throat Assembly).
5. Connect the Drop Box as per Figure 4.
6. Re-attach the Face Plate Assembly.
7. Hang the Tag Retention Box in position 1 (see Figure 3) below the Throat Assembly.
8. Mark out and drill two suitable holes for the Power Cable and Comms Cable.
9. Seal the Power Cable Hole and Comms Cable Hole using the supplied PG7 Cable Glands.

Emptying the Tag Retention Box

1. Unlock the Tag Retention Cabinet.
2. Lift the Tag Retention Box off the lip located at position 1 (see Figure 3).
3. Turn the Tag Retention Box so that the lip faces away from the open Cabinet door.
4. Hang the Tag Retention Box on the lip located at position 2 (see Figure 3).
5. Empty the Tag Retention Box and return the Box back to position 1 (see Figure 3).
6. Lock the Tag Retention Cabinet.

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ELECTRICAL CONNECTIONS

Typical Electrical Connections

Figure 4 shows a typical electrical connection diagram for the ImproX DBv.

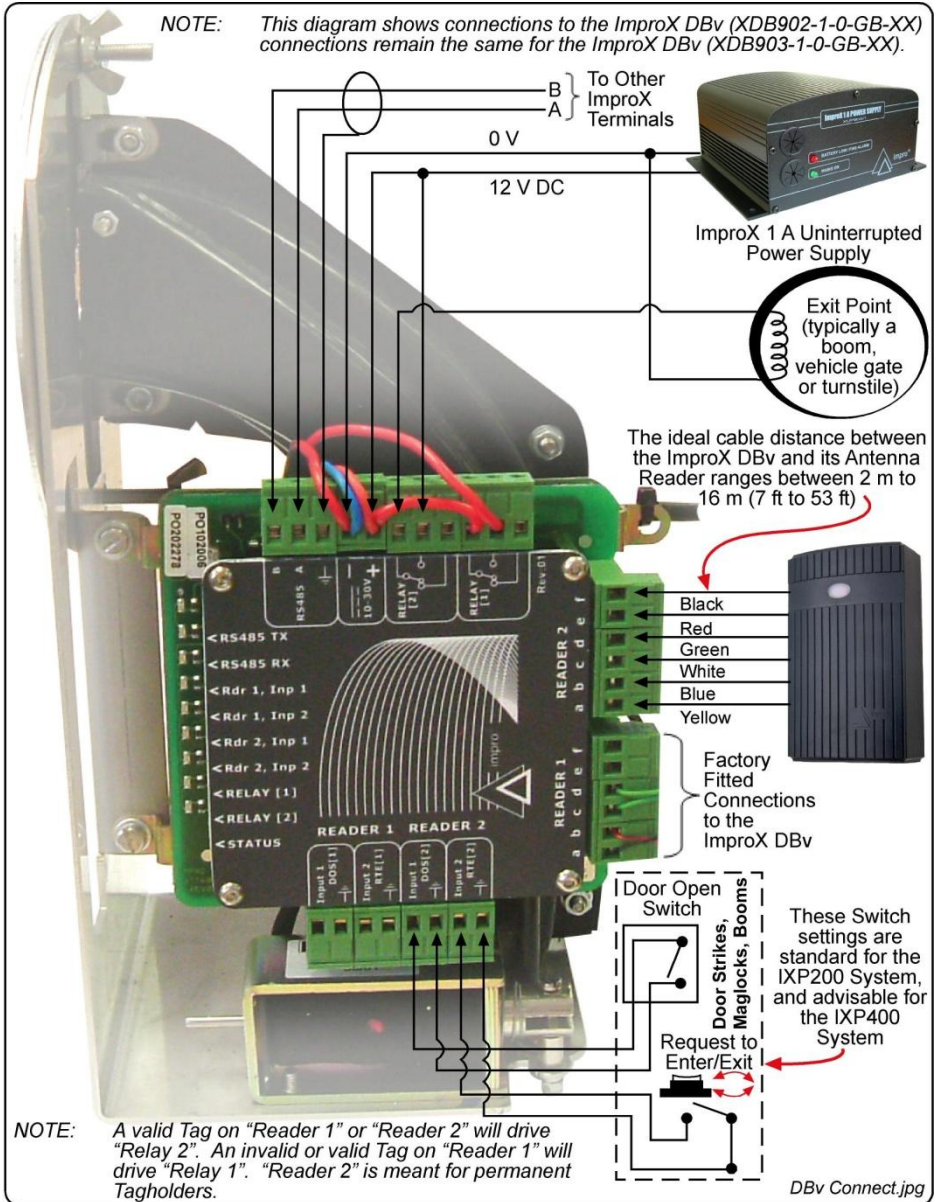


Figure 4: Typical ImproX DBv Electrical Connections

Fixed Address Label

Once the ImproX DBv is installed, sketch a rough site plan. Attach the loose (additional Fixed Address Labels packaged with the Drop Box) Fixed Address Labels in the position of the Drop Box on the sketched site plan. When the system installation is complete and all the units are represented on the site plan by their Fixed Address Labels, file the site plan for future reference.

GUARANTEE OR WARRANTY

This product conforms to our Guarantee or Warranty details placed on our Web Site, to read further please go to www.impro.net.

USER NOTES

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This manual is applicable to the ImproX (DBv) Vertical Mount Drop Box,
XDB902-1-0-GB-02 and XDB903-1-0-GB-01.

(The last two digits of the Impro stock code indicate the issue status of the product).

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