
IXP 100 SERIES

IXP 100 SERIES SINGLE-DOOR ACCESS CONTROL SYSTEM

INTRODUCTION

An IXP 100 System is a cost-effective, single door, standalone or PC connected access control system for up to 500 users, which is simple to install and maintain.

The IXP Series comprises three major components :

- Door Entry Unit (DEU).
- Door Control Unit (DCU).
- PC Software.

The DEU is available in three versions, all fully potted to allow external mounting, as follows :

- The keypad version in a die-cast housing suitable for use in harsh environments.
- A non-keypad version in a die-cast housing suitable for use in harsh environments.
- A non-keypad version in a tubular housing for concealed mounting in a wall.

The DCU is housed in an aluminium extrusion. It is connected to the DEU by 4 wires over a maximum distance of 20 m, and uses a high security communications protocol. The DCU is mounted on the secure side of the door

The system is intended to allow multiple users through a single door. Instead of the normal key, the door can only be opened from the outside when a valid tag is presented to the unit. The presentation of a valid tag may optionally also require a PIN number to be entered at the keypad (keypad version only). Lost tags can be voided from the system without having to change locks or having any impact on other tag holders.

Except for one or two minor features, all functions and facilities are configurable using the IXP 100 PC software program or manually. For typical installations where these more advance facilities are not needed, the use of a PC is not required and even the basic system setup can be performed through the Door Entry Unit (keypad version only).

The system even allows either PC connection or manual modification of the database – and the next time the two are connected, they are synchronised !

An IXP 100 System provides functions including access time patterns for improved door usage control, reason codes to facilitate time and attendance systems, time stamped transaction logging, and interaction with installed alarm panels for arming / disarming. Default parameters ensure that system configuration is quick and straightforward. The ability to alter these parameters ensures system flexibility to cater for all types of installations. The IXP 100 Series also allows for individual transaction events to be selected for logging thus optimising the use of the transaction buffer memory.

An IXP 100 System includes a small power supply circuit that will accept an input AC source with lead acid backup battery to ensure normal operation during AC power supply circuit trickle charges the battery during normal operation. This offers the benefit of only adding an AC transformer and battery, which are readily available over the counter world-wide.

APPLICATIONS

Typical prospective sites include the following :

- Domestic Complexes.
- High Security Areas.
- Computer Rooms.
- Stock Rooms.
- Medical Dispensaries.



A Door Control Unit



The non-keypad version of the DEU in a die-cast housing suitable for use in harsh environments



The keypad version of the Door Entry Unit in a die-cast housing suitable for use in harsh environment



The non-keypad version of the DEU in a tubular housing for concealed mounting in a wall

FEATURES

- Three user-tag levels namely "User", "Supervisor", and "Administrator".
- Reads Impro Slim Tags and Impro Omega Tags (125 kHz Manchester full-duplex).
- Each DCU will utilise a unique 6-digit security code for purposes of replacing hardware items and special engineering functions.

- Arming and Disarming of a user-supplied alarm panel by means of the DEU keypad and a DCU relay contact. Only authorised tagholders (Administrator & Supervisor) are able to disarm by means of their tag and PIN.
- Where no alarm panel is used, the functionality can be changed to operate as a simple intrusion alarm whereby a siren is activated when the door-open sensor is triggered.
- Definition of simple time patterns for “User” tagholders.
- 500 tagholders and a 500 transactions buffer.
- Optional 4-digit PIN code per tagholder.
- Entry of Reason Codes to Facilitate T&A systems. The Reason Code entry can be enabled / disabled and the length of the Reason Code is adjustable to one or two digits.
- Detection of door left open, door not opened, and door forced events.
- Audio / visual indication of AC power failure.
- Firmware upgrade facility from a PC.
- Special function key assignments for alarm arming, changing PIN codes, entering programming mode, and configuration functions.

Important Note : The non-keypad versions of the **DEU** are not able to accept keypad entry and will thus operate with reduced functionality. PIN code entry, Reason Code entry, alarm arming and disarming, DEU programming, and Special Function Key-presses are not available on the non-keypad DEUs. For non-keypad DEUs, programming is done from a PC

SPECIFICATIONS

PHYSICAL SPECIFICATIONS				
	DCU	IXP101 DEU	IXP102 DEU	IXP103 DEU
Dimensions	L = 106 mm (4.17") W = 115 mm (4.54") H = 50 mm (1.97")	L = 143 mm (5.63") W = 76 mm (3") H = 28 mm (1.1")	D = 76 mm (2.99") H = 28 mm (1.10")	D = 20mm (0.79") L = 83 mm (3.77")
Mass	300 g. (12.33 oz)	450 g . (19.4 oz)	200 g. (12.33 oz)	85 g. (3 oz)
Housing Material	Aluminium	Die-cast zinc alloy	Die-cast zinc alloy	PVC
Colour	Matt black	Natural die-cast Metal finish	Natural die-cast Metal finish	White
ENVIRONMENTAL SPECIFICATIONS				
	DCU	IXP101 DEU	IXP102 DEU	IXP103 DEU
Temperature Operating	-25°C to 60 °C (-13°F to +140°F)	-25°C to 60 °C (-13°F to +140°F)	-25°C to 60 °C (-13°F to +140°F)	-25°C to 60 °C (-13°F to +140°F)
Temperature Storage	-40°C to 80 °C (-40°F to +176°F)	-40°C to 80 °C (-40°F to +176°F)	-40°C to 80 °C (-40°F to +176°F)	-40°C to 80 °C (-40°F to +176°F)
Humidity Range	0 to 95% relative humidity at +40°C (+104°F) non-condensing	0 to 95% relative humidity at +40°C (+104°F) non-condensing	0 to 95% relative humidity at +40°C (+104°F) non-condensing	0 to 95% relative humidity at +40°C (+104°F) non-condensing
EMC	EN 55024	EN 55024	EN 55024	EN 55024
Electrostatic Discharge	EN 61000-4-2	EN 61000-4-2	EN 61000-4-2	EN 61000-4-2
Electrical Fast Transients	EN 61000-4-4	EN 61000-4-2	EN 61000-4-2	EN 61000-4-2
Surge Immunity	EN 61000-4-5	EN 61000-4-5	EN 61000-4-5	EN 61000-4-5
Voltage Dips & Interruptions	EN 61000-4-11	EN 61000-4-11	EN 61000-4-11	EN 61000-4-11

	DCU	IXP101 DEU	IXP102 DEU	IXP103 DEU
Conducted Susceptibility	EN 61000-4-6	EN 61000-4-6	EN 61000-4-6	EN 61000-4-6
Dust and Splash Resistance	These units are manufactured in accordance with a dust and splash environment similar to that of IP53.			
Drop Endurance	2m drop (in packaging).	2m drop (in packaging).	2m drop (in packaging).	2m drop (in packaging).
ELECTRICAL SPECIFICATIONS				
	DCU	IXP101 DEU	IXP102 DEU	IXP103 DEU
Power Requirements				
Battery charging Voltage	14 V to 18 V AC or 18 V to 24 V DC	5 V DC, polarity sensitive	5 V DC, polarity sensitive	5 V DC, polarity sensitive
Current	45mA	35 m A at 5 V DC – indicators all on	35 m A at 5 V DC – indicators all on	35 m A at 5 V DC
Power Input Protection	25V metal oxide varistor, transient voltage suppressor, not polarity sensitive.	Reverse polarity protection provided on the unit.	Reverse polarity protection provided on the unit.	Reverse polarity protection provided on the unit.
Permissible Input Supply Ripple Voltage (maximum)	N/A	1 Vpp at 50 Hz	1 Vpp at 50 Hz	1 Vpp at 50 Hz
Power Outputs				
Power to Battery				
Voltage	13.8 V DC	N/A	N/A	N/A
Current	1 A (max)	N/A	N/A	N/A
Power to DEU				
Voltage	5 V DC	N/A	N/A	N/A
Current	35 mA	N/A	N/A	N/A
Power to PC Interface				
Voltage	5 V DC	N/A	N/A	N/A
Current	100 mA (max)	N/A	N/A	N/A
Over-current Protection	Yes	N/A	N/A	N/A
Power to other external Devices				
Voltage	13.8 V DC	N/A	N/A	N/A
Current	2 A (max)	N/A	N/A	N/A
Mains Fail Warning	Audio - visual	Audio - visual	Audio - visual	Audio - visual
Nominal Read Range	N/A	30 mm to 70 mm (tag type-dependent) see Table 1.	30 mm to 70 mm (tag type-dependent) see Table 1.	30 mm to 60 mm (tag type-dependent) see Table 1.
Clock	Real time clock	N/A	N/A	N/A
Flash ROM	32 Kbytes.	4 Kbytes.	4 Kbytes.	4 Kbytes.
Firmware Upgrade Facility	Via the RS232 port.	No	No	No

	DCU	IXP101 DEU	IXP102 DEU	IXP103 DEU
Comms Interface				
Electrical Interface	RS232, 3-wire	Clock and data	Clock and data	Clock and data
Baud rate	38 400	N/A	N/A	N/A
Data format	8 data bits, no parity, 1 stop bit	Proprietary	Proprietary	Proprietary
Communications protocol	ImproX Secure Communications Protocol	As per DCU	As per DCU	As per DCU
Authentication	The PC authenticates information from the DCU by sending it a challenge code along with its request for information. When the DCU responds it sends back a response code. The PC then verifies that the response code is correct before acting on the information received.	N/A	N/A	N/A
Relay Outputs				
Alarm Relay	1 x N/O, COM, N/C. Rating 2A @ 28 V DC	N/A	N/A	N/A
Latch Relay	1 x N/O COM, N/C Rating 2A @ 28 V DC	N/A	N/A	N/A
Digital Inputs				
RDY/SEN	Dry contact, non-potential sensing. 4 V to 30 V DC potential sensing. Input protection to 50 V (continuous).	N/A	N/A	N/A
RTE	Dry contact, non-potential sensing. Input protection to 50 V (continuous).	N/A	N/A	N/A
Anti-tamper Protection	Firmware	Firmware	Firmware	Firmware
OPERATOR INTERFACES				
	DCU	IXP101 DEU	IXP102 DEU	IXP103 DEU
Keypad				
Keys	N/A	12 alphanumeric keys rated to 1 000 000 operations.	N/A	N/A

	DCU	IXP101 DEU	IXP102 DEU	IXP103 DEU
Buzzer				
Volume	N/A	Programe adjustable in four discrete steps (including off).	Programe adjustable in four discrete steps (including off).	Programe adjustable in four discrete steps (including off).
Tones	N/A	Single tone	Single tone	Single tone
Status Indicators				
Bi-colour Red/Green LED	N/A	Tri-colour Red / Green / Amber LED	Tri-colour Red / Green / Amber LED	Tri-colour Red / Green / Amber LED
Factory Default Settings				
Buzzer Volume	N/A	Level 3 (maximum)	Level 3 (maximum)	Level 3 (maximum)

SYSTEM PC

Hardware

The IXP 100 software must operate on the minimum PC hardware configuration as follows :

- CPU : 486 DX Motherboard or faster processor.
- Memory : minimum 16 Mb RAM (128 Mb for Windows NT).
- Peripherals : CD ROM Drive optional.
- Hard Drive : 500 Mb Hard Disk Drive.
- Floppy Drive : 3.5" high-density floppy Drive.
- Pointing Device : mouse or equivalent.
- Display : Super VGA monitor with a minimum resolution of 800 x 600.

Software

The IXP 100 requires the following software to be installed on the host PC.

- Operating System : Windows 3.1, 3.11, 95, 98, NT, 2000, or ME

SOFTWARE

Overview of the Impro IXP 100 Software

The Impro IXP 100 Software enables the user to carry out the following activities :

- (a) Installing the Impro IXP 100 software.
- (b) Setting of System Parameters.
- (c) Setting of Tag entries.
- (d) Translation.
- (e) Storage of transactions/events.
- (f) Storage of system data.
- (g) Storage of tag records.
- (h) On line transaction viewing.
- (i) Generating reports.
- (j) Card design and printing.
- (k) Display of building graphics.

PC Software Configuration

The following functions must be configured from the PC software and cannot be performed via the DEU :

- (a) Selection of transaction types for recording.
- (b) Calibration of real time clock (if applicable).
- (c) Definition of the database name (if applicable).

TAG READ RANGE

The range at which the Readers can read a tag is dependent on the type of tag and on the material on which a particular reader is mounted. Typical ranges are shown in Table 1 and 2 below.

TAG TYPE	TYPICAL RANGE (minimum) (Metal DEU mounted on non-metallic surface)
ImproX Credit Card Tag	70 mm (2.76")
ImproX Key-ring Tag	50 mm (1.97")
ImproX Pico Tag	30mm (1.18")
NOTE : Mounting the reader on a metallic surface may decrease the read/write range by up to 15%.	
Table 1 : Typical Metal DEU Tag Read Ranges	

TAG TYPE	TYPICAL RANGE (minimum) (Tubular DEU mounted on non-metallic surface)
ImproX Credit Card Tag	60 mm (2.36")
ImproX Key-ring Tag	40 mm (1.57")
ImproX Pico Tag	30mm (1.18")
NOTE : Mounting Tubular DEU on a metallic surface may decrease the read/write range by up to 15%.	
Table 2 : Typical Tubular DEU Tag Read Ranges	

ACCESSORIES

The supplied accessories are shown in Table 3 below :

Item	DCU	IXP 101 DEU	IXP 102 DEU	IXP 103 DEU
Mounting Devices	Wall mounting plugs and screws	Wall mounting plugs and screws	Wall mounting plugs and screws	N/A
Cable	N/A	2 m cable	2 m cable	2 m cable
Electrical Devices	N/A	N/A	N/A	LED, Buzzer, Molex connector
Table 3 : Accessories				



MODEL NUMBER: IXP901-1-0-GB-XX
IXP902-1-0-GB-XX
IXP903-1-0-GB-XX

INTERNATIONAL STANDARDS

The IXP 100 units comply with the requirements of the following international standard where applicable.

EN 55024 Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment.

APPROVALS

CE Approved.

FCC Approved.

ORDERING INFORMATION

The IXP 100, 101 and 102 Systems can be ordered under the following Impro codes.

System	Ordering Code
IXP System 101 (Door Control Unit plus Metal Keypad Door Entry Unit)	IXP901-1-0-GB-XX
IXP System 102 (Door Control Unit plus Metal Non-Keypad Door Entry Unit)	IXP902-1-0-GB-XX
IXP System 103 (Door Control Unit plus Tubular Door Entry Unit)	IXP903-1-0-GB-XX