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IPS Boxed Solution
COMBO CLUSTER

Product specification
CATALOGUE

This **Combo Cluster** includes a Cluster Controller Module and up to three expansion modules, with an isolated DC power supply pre-installed in the steel housing.

The power and communications wiring between the Cluster Controller Module and its expansion modules have all been taken care of, making installation and commissioning a quick and efficient exercise.

The Combo Cluster may be used as an autonomous **Access Portal Lite** (AP Lite) installation – or it may be a component in a much larger **Access Portal Pro** (AP Pro) installation.

AP Lite runs on the Cluster Controller Module, and may be accessed remotely using the built-in web interface with a browser via the Ethernet connector – or via a built-in LCD touch screen interface.

Expansion Modules
The installed Expansion Modules are all the same, offered pre-installed up to a maximum of three from a choice of three types:

- Wiegand Reader Modules
- Antenna Reader Modules
- Digital I/O Modules

Each **Wiegand Reader Module** (three shown in the picture) has two Wiegand Reader ports, two relays and four dry contact digital inputs.

Each **Antenna Reader Module** has two Antenna Reader ports, two relays and four dry contact digital inputs.

Each **Digital I/O Module** has four relays and eight dry contact digital inputs.

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Key Features – Cluster Controller Module (CCM)

General Features

- Some models have a built-in LCD touch screen and registration reader, excellent for a self-contained system for small installations.
- The Cluster Controller PCB has 8 LED diagnostic indicators, four of which are visible with the plastic housing closed
- 3-Year Warranty on Hardware
- Cost effective solution that fits seamlessly into legacy Systems
- A Software utility to upgrade Firmware while installed on-site, without removal of the CCM
- Up to 4 Expansion Modules may be accommodated with the CCM, a further 8 Expansion Modules may be connected via S-Bus and mounted up to 150 m away from the CCM.
- S-Bus uses AES 128-bit Encryption through a Diffie Hellman key exchange to ensure secure communications
- A TCP/IP Bus which links the System Controller to the Host PC with a standard Ethernet Cable
- A Software utility to upgrade Firmware while installed on-site, without removal of the CCM.

When the CCM is configured as an IXP220 Controller

- 64 Reader Fixed Addresses (in total) via RS485 or IP S-Bus to other Clusters, or to legacy Impro (iTT) Intelligent Twin Reader Terminals and Impro (iTRT) Intelligent Twin Reader Terminals
- Up to 10 000 Tags and up to 100 000 buffered Transactions
- Communication options with host include Ethernet and RS485

When the CCM is configured as an Access Portal Pro Controller

- 64 Reader Fixed Addresses, offering connection via RS485 to other Clusters, or to the legacy Impro (iTT) Intelligent Twin Reader Terminal and Impro (iTRT) Intelligent Twin Reader Terminal
- Up to 10 000 Tags and up to 100 000 buffered Transactions
- Stores all information locally on the CCM

When the CCM is configured as an Access Portal Lite Controller

- 16 Reader Fixed Addresses (Some of these may be via Expansion Modules mounted outside of the IPS Housing, connected via S-Bus)
- The built-in AP Lite Web UI runs on any HTML 5 compliant web browser
- The AP Lite Web UI allows export of CSV data from the Web browser
- Up to 1 000 tag holders (up to 3 tags each) and up to 100 000 buffered Transactions

When the CCM has an Integrated LCD touchscreen display

- The touch screen interface allows direct access to the AP Lite application at the Cluster Controller Module via AP Lite Touch (very similar to the legacy IXP20).
- 125 kHz and 13.56 MHz Tags can be enrolled using the enrolment reader that is also built into the cover of all touch-screen equipped Cluster Controller Modules.

When the CCM is configured as a Door Controller

- Support for the following Terminal Communication options:
  - Ethernet—Connect to your chosen System Controller using the existing IP infrastructure.
  - RS485—an ultra-reliable method (not affected by network problems) of connecting to your chosen System Controller.

- Read/Write capability using the following Impro Tags: Slim Tags and Omega Tags (Read Only). Philips HITAG™ 1 and Philips HITAG™ 2 (Read/Write). HID 125 kHz Tags (Read Only).

NOTE: HID is a registered trademark of HID Global Corporation (an ASSA ABLOY Group Brand).

- On-board intelligence allowing the Cluster to run off-line from the System Controller.
- The Processor (configured as a Door Controller stores up to 100 000 Transactions.
- A further16 fixed addresses can be controlled via S-Bus – connected expansion Modules (Wiegand Reader Modules, Antenna Reader Modules and Digital I/O Modules

NOTE: Note that the communications bandwidth available on S-Bus is limited to 9600 baud.

Key Features – Wiegand Reader Module (WRM)

- Zero Downtime – Replacing a WRM only requires downtime on the doors associated with the Expansion Modules being replaced (the Tag memory and Transaction Buffer reside in the CCM).
- 3-Year Warranty on Hardware
- A Software utility to upgrade Firmware while installed on-site, without removal of the WRM
- Flexibility in installation – The WRM may be:
  - Plugged (together with other Expansion Modules) into the CCM, forming part of a "Cluster" of Impro Controller Modules
  - Installed up to 150 m away from its CCM (connected via S-Bus)
  - Installed (as a PCB Card) in a 19" Rack version of the system

- The WRM Interfaces to the following Impro Readers:
  - Impro Multi-discipline Readers
  - Impro Wiegand Reader
  - Impro Multi-mode Readers

- The WRM:
  - Offers full Wiegand Support
  - Interfaces to the Impro Quad Receiver and third-party Wiegand readers
  - Connects up to two readers or third-party devices
  - Allows Relaxed or Full Anti-passback (APB) access on a single door or single entry on two doors
  - Has End-Of-Line (EOL) sensing on Door Open Sensor (DOS) Inputs
  - Has eight status LEDs, (two visible with the housing closed) providing concise diagnostic indication

- Two 10 A independent single-pole, double-throw (SPDT) Relay Outputs that allow you to interface to door strikes, magnetic locks and other third party devices (for example alarm panels or lighting).
- Four Digital Inputs including two Door Open Sensor (DOS) and two Request to Exit (RTE) Inputs.

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Key Features – Antenna Reader Module (ARM)

- Zero Downtime – Replacing a WRM only requires downtime on the doors associated with the Expansion Modules being replaced (the Tag memory and Transaction Buffer reside in the CCM).
- A Software utility to upgrade Firmware while installed on-site, without removal of the ARM.
- Flexibility in installation – The ARM may be:
  - Plugged (together with other Expansion Modules into the CCM, forming part of a "Cluster" of Impro Controller Modules
  - Installed up to 150 away from its CCM (connected via S-Bus)
  - Installed (as a PCB Card) in a 19" Rack version of the system
- The ARM supports the following tags:
  - Slim Tags (Read only)
  - Omega Tags (Read Only)
  - Philips HITAG™ 1 and Philips HITAG™ 2 (Read/Write)
  - HID 125 kHz Tags (Read Only).

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- 16-step Auto-tune that allows for increased cable distances of up to 25 m (82 ft.) for Non-keypad Antenna Readers and up to 16 m (53 ft.) for Keypad Antenna Readers.
- End-of-Line (EOL) Sensing on Door Open Sensor (DOS) Inputs.
- Connection to up to two Antenna Readers per ARM, allowing Relaxed or Full Anti-passback (APB) access.
- An excellent user interface consisting of 8 LED "Diagnostic Indicators".
- Two independent single-pole, double-throw (SPDT) Relay Outputs which let you interface to door strikes, magnetic locks and other third-party devices (for example alarms panels or lighting).
- IXP220 / ImproNet System Compatible
- Four Dry Contact Digital Inputs including two Door Open Sensor (DOS) and two Request to Exit (RTE) Inputs. *(When used in Access Portal Pro or IXP220 Systems, these inputs may be configured for other uses, including: Scanner Inhibit, Alarm interface and Action Request)*
- A Software utility to upgrade Firmware while installed on-site, without removal of the ARM (provided the ARM is clustered with its CCM).

Key Features Digital I/O (DIO) Module

- Zero Downtime – Replacing a WRM only requires downtime on the doors associated with the Expansion Modules being replaced (the Tag memory and Transaction Buffer reside in the CCM).
- Flexibility in installation, the DIO Module may be:
  - plugged (together with other expansion modules) into the Cluster Controller Module, forming part of a "cluster" of Impro modules.
  - installed up to 150 m away from its Cluster Controller Module (connected via S-Bus).
  - installed (as an IPS module) in an IPS housing.
- An excellent user interface consisting of 14 LED diagnostic indicators.
- Four independent single-pole, double-throw (SPDT) relay outputs which let you interface to door strikes, magnetic locks and other third-party devices (for example electric gates, alarm panels or lighting).
- Eight dry contact digital inputs that *(when used in Access Portal Pro or IXP220 System)* may be configured for other uses, including: Scanner Inhibit, Alarm Interface and Action Request).
- End-of-Line (EOL) sensing on all eight digital inputs.
- A Software utility to upgrade firmware while installed on-site, without removal of the DIO Module (provided the DIO Module is clustered with its Cluster Controller Module).

Electrical Specifications – Cluster Controller

Power

Input Voltage	:	12 V DC to 15 V DC	
Power Requirements (at 12V DC)		Current (mA)	Power (W)
Models with no touch screen	:	140	1.7
Models with Touch Screen	:	175	2.1
Power Input Protection	:	Reverse polarity and over-current protection are provided.	

Peripheral Communications Ports

Clustering Feature (Baud Rate 115 200)	:	Up to 8 Expansion Modules may be plugged side-to-side and into the Cluster Controller.
S-Bus (Host) (Baud Rate 7 600)	:	This allows Expansion Modules (like the WRM) and other S-Bus Devices to be installed up to 150m from the Cluster Controller. A maximum of eight devices may be connected via S-Bus.
Host Computer	:	Standard Ethernet RJ45 connector. 10/100 Base T, half or full duplex, Proprietary Protocol
RS485 Door Controller Maximum 64 Addresses	:	RS485, 38 400 Baud, 8 data bits, no parity, 1 stop bit, Secure Communications Protocol Provision is made for line termination
RS485 System Controller Maximum 64 Addresses (Only in IXP220 mode.)	:	RS485, 38 400 Baud, 8 data bits, no parity, 1 stop bit, Secure Communications Protocol Provision is made for line termination

Real Time Clock Backup Battery (RTC)

Battery Type	:	1 x 3 V, CR2032, lithium cell battery.
Battery Life	:	2 Years with power OFF 5 years with power ON 5 years storage with battery tab in place.

Processor

Type	:	32-bit ARM Cortex M3 Operating at 180 MHz
Total RAM	:	200 K Byte
Flash	:	16 M Byte

Other

Anti-tamper Sensing	:	Wired to the IPS housing lid micro switch.

Electrical Specifications – Wiegand Reader Module

Power

Input Voltage	:	12 V DC to 15 V DC, polarity sensitive.	
Power Requirements		Current (mA)	Power (W)
12 V DC with no peripherals connected and relays off	:	37	0.44
Power Input Protection	:	Reverse polarity and over-current protection are provided on the Module.	
Relay Power Requirements	:	An additional ~0.4 W per Relay used	

Communications

Direct (Baud Rate 115 200)	:	When the WRM is plugged (side-by-side) directly into a cluster, or in the IPS Housing option.
S-Bus (Baud Rate: 9600)	:	S-Bus allows for the remote installation of the WRM, up to 150m away from its Cluster Controller.
Module Status	:	Slave

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Digital Inputs

Input Type	:	2 Dry-contact inputs with End-of-line (EOL) Sensing and 2 Dry-contact inputs without End-of-line (EOL) Sensing
Detection Resistance Range	:	< 2 kΩ
Protection Range	:	+15 V continuous

Relays

Relay Output	:	2 Relays, Form C, each with NO, COM and NC contacts
Contact Ratings	:	10 A at 28 V DC 5 A at 220 V AC 10 A at 120 V AC
Operations	:	100 000 Minimum
Power Consumption (per Relay)	:	~ 0.4 W

Processor

Type	:	ARM Cortex M0 operating at 45MHz
Total RAM	:	4 K Byte
Flash	:	48 K Byte

Reader Options

Reader 1 Wiegand and Reader 2 Wiegand allow connection to the following hardware:

- Impro Multi-discipline Readers
- Impro Multi-mode Remotes
- Wiegand Readers

The function is selectable via the DIP-switches.

Wiegand Terminal Interface

Power Output	:	12 V DC OR 5 V DC (selectable) at maximum 200 mA
Modes Supported	:	Tag + PIN-code or Reason Code
Baud Rate	:	7 600
Data Format	:	8 data bits, no parity, 1 stop bit
Electrical Interface	:	Wiegand
Communications Protocol	:	Impro Proprietary Protocol

Other

Anti-tamper Switch	:	Not in use – The CCM monitors the IPS housing lid switch

Electrical Specifications – Antenna Reader Module

Power

Input Voltage	:	12 V DC to 15 V DC, (polarity sensitive) when powered separately as necessary for a remote, S-Bus installation	
Power Requirements		Current (mA)	Power (W)
Input Voltage 12 V DC with no Antennas attached	:	50	0.6
Input Voltage 12 V DC with Antennas attached	:	200	2.4
Power Input Protection	:	Reverse polarity, and Transient voltage protection is provided	
Relay Power Requirements	:	An additional ~0.4 W per Relay in use	

Communications

Direct (Baud Rate 115 200)	:	When the ARM is plugged (side-by-side) directly into the CCM, or installed as a PCB Card in a 19" Rack Installation.
S-Bus (Device) (Baud Rate: 9600)	:	S-Bus allows for the remote installation of the ARM, up to 150m away from its CCM.
Module Status	:	Slave

Reader Options

Antenna Port	:	2 Fully functional Antenna Reader Ports.

Digital Inputs

Input Type	:	2 Dry-contact inputs with End-of-line (EOL) Sensing and 2 Dry-contact inputs without End-of-line (EOL) Sensing.
Detection Resistance Range	:	< 2 kΩ
Protection Range	:	+15 V continuous.

Relays

Relay Output	:	2 Independent, single-pole, double-throw (SPDT) Relays, each with NO, COM and NC contacts.
Contact Ratings	:	10 A at 28 V DC 5 A at 220 V AC 12 A at 120 V AC
Operations	:	100 000 Minimum

Processor

Type	:	ARM Cortex M0 operating at 45MHz
Total RAM	:	4 K Byte
Flash	:	48 K Byte

Other

Anti-tamper Switch	:	Not in use – The CCM monitors the IPS housing lid switch

Electrical Specifications – Digital I/O Module

Power

Input Voltage	:	12 V DC to 15 V DC, (polarity sensitive) when powered separately as necessary for a remote, S-Bus installation	
Power Requirements		Current (mA)	Power (W)
Input Voltage 12 V DC with relays off	:	50	0.6
Input Voltage 12 V DC with all 4 relays activated	:	230	2.7
Power Input Protection	:	Reverse polarity, and Transient voltage protection is provided	
Relay Power Requirements	:	An additional ~0.4 W per relay in use	

Communications

Direct (Baud Rate 115 200)	:	When the DIO Module is plugged (side-by-side) directly into the CCM, or installed as a PCB Card in a 19" Rack Installation.
S-Bus (Device) (Baud Rate: 9600)	:	S-Bus allows for the remote installation of the DIO Module, up to 150m away from its CCM.
module Status	:	Slave

Digital Inputs

Input Type	:	Eight dry-contact inputs with End-of-line (EOL) Sensing
Detection Resistance Range	:	< 2 kΩ
Protection Range	:	+15 V continuous.

Relays

Relay Output	:	Four Independent, single-pole, double-throw (SPDT) Relays, each with NO, COM and NC contacts.
Contact Ratings	:	10 A at 28 V DC 5 A at 220 V AC 12 A at 120 V AC
Operations	:	100 000 Minimum

Processor

Type	:	ARM Cortex M0 operating at 45MHz
Total RAM	:	4 K Byte
Flash	:	48 K Byte

Other

Anti-tamper Switch	:	Not in use – The CCM monitors the IPS housing lid switch

User Interface – Cluster Controller Module

Touch-screen display (See order codes for models that apply – page 6)

Type	:	Backlit TFT colour LCD
Size	:	71 mm (2.8")
Resolution	:	320 x 240
Touch Screen Technology	:	Resistive

Diagnostic Indicator LEDs

Status	:	Continuous Red, flashing during fault (Visible through closed housing)
Ethernet Link	:	Continuous Red (Visible through closed housing)
Ethernet Speed	:	Red LED on for 100 MHz, off for 10 MHz (Visible through closed housing)
Data	:	Flashes green During Communication (Visible through closed housing)
RS485 System Controller TX	:	Red while transmitting data
RS485 System Controller RX	:	Green while receiving data
RS485 Door Controller TX	:	Red while transmitting data
RS485 Door Controller RX	:	Green while receiving data

CAUTION: AP Lite does not support the use of HID 1346 Proxkey II Tags.

NOTE: Because of the way standard Wiegand Readers handle HID Tag codes, AP Lite Sites using standard Wiegand Readers can only support one of two options: HID Tags only or other 125 kHz Tag types (such as Slim Tags, Omega Tags, Philips HITAG™1 and Philips HITAG™ 2 depending on the Reader). For HID Tags only, set the DIP-switch to Wiegand Open Format and the Wiegand Reader to HID Raw Mode. For any other Tag type, set the DIP-switch to Wiegand 26-bit/44-bit. For more information refer to the Installation Manual for the Cluster Controller Module. If you need a combination of HID Tags and other Tag types, make use of the Impro Multi-discipline Readers.

User Interface – Wiegand Reader Module

LED Status and Diagnostic Indicators

Status LED	:	Continuous Red, flashing during fault (Visible through closed housing)
Data LED	:	Flashes green During Communication (Visible through closed housing)
Relay 1	:	Continuous Red on activation of the Relay
Relay 2	:	Continuous Red on activation of the Relay
Reader 1, RTE	:	Continuous Green on detected contact closure
Reader 1, DOS	:	Continuous Green on detected contact closure
Reader 2, RTE	:	Continuous Green on detected contact closure
Reader 2, DOS	:	Continuous Green on detected contact closure

Reader Options – Wiegand Reader Module

Reader 1 Wiegand and Reader 2 Wiegand allow connection to the following hardware:

- ImproX Multi-discipline Readers
- ImproX Multi-mode Remotes
- Wiegand Readers
- ImproX (IR) Infrared Receiver
- Impro (QR) Quad Receiver

The function is selectable via the DIP-switches.

Power Output	:	12 V DC and 5 V DC (selectable) at maximum 200 mA
Modes Supported	:	Tag + PIN-code or Reason Code
Baud Rate	:	9 600
Data Format	:	8 data bits, no parity, 1 stop bit
Electrical Interface	:	TTL Full Duplex
Communications Protocol	:	ImproX Proprietary Protocol

Factory Defaults

Baud Rate	:	Factory-set to 38 400
Mode	:	Receive (Slave Mode)

User Interface – Antenna Reader Module

LED Status and Diagnostic Indicators

Status LED	:	Continuous Red for Normal Operation Flashing Red During Firmware Upgrade Off when Supply Voltage outside limits
Data	:	Flashing Green as per outgoing data.
Relay [2]	:	Continuous Red on activation of the Relay.
Relay [1]	:	Continuous Red on activation of the Relay.
Reader 2, RTE [2]	:	Continuous Green on detected contact closure.
Reader 2, DOS [1]	:	Continuous Green on detected contact closure.
Reader 1, RTE [2]	:	Continuous Green on detected contact closure.
Reader 1, DOS [1]	:	Continuous Green on detected contact closure.
Data	:	Flashing Green as per outgoing data.

Beep Codes

Fails Power-on Self-test	:	Continuous beep for 2 seconds.
Passes Power-on Self-test	:	Two short beeps of 200 ms duration, separated by a 200 ms inter-beep pause.

User Interface – Digital I/O Module

LED Status and Diagnostic Indicators

Status LED	:	Continuous Red for Normal Operation Flashing Red During Firmware Upgrade Off when Supply Voltage outside limits
Data	:	Flashing Green as per outgoing data
Relays [1-4]	:	Continuous Red on activation of the Relay
Digital Inputs [I1-I8]	:	Continuous Green on detected contact closure
Data	:	Flashing Green as per outgoing data

Physical Specifications

IPS Housing, containing Cluster Controller Module, 4 x Expansion Modules and a DC power supply

Depth	:	82 mm (7.3 in)
Width	:	380 mm (3.88 in)
Height	:	310 mm (2.28 in)
Approximate Weight	:	5,45 kg (7.44 oz.)
Housing Material	:	Steel
Colour	:	Black

Environmental Specifications

Operating Temperature	:	-25°C to +60°C (-13°F to +140°F)
Storage Temperature	:	-40°C to +80°C (-40°F to +176°F)
Humidity Range	:	0 to 95% relative humidity at +40°C (+104°F) non-condensing

Approvals

Dust & Splash Resistance (XRT910)	:	Designed to work in an indoor (dry) environment similar to IP20. The IPS housing is not sealed against water ingress
Drop Endurance	:	1 m (3.28 ft.) drop (in packaging)

Ordering Information – for more Expansion Modules

Additional Expansion Modules may be ordered using these part numbers:

HCW930-0-0-GB-XX	:	Wiegand Reader Module (for IPS)
HCW931-0-0-GB-XX	:	Antenna Reader Module (for IPS)
HCW932-0-0-GB-XX	:	Digital I/O Module (for IPS)

As shown in the example system diagrams, up to four Expansion Modules may be installed in the IPS Housing

Expansion Modules may be purchased individually and can be installed into the vacant spaces in the housing in a minute or two, without having to power down the cluster.

Related Information

For extra information relating to these modules refer to the following:

IPS351-0-0-GB-XX	:	IPS Combo Cluster Installation Manual
HML300-0-0-GB-XX	:	Antenna Reader Module Installation Manual
HMW300-0-0-GB-XX	:	Wiegand Module Installation Manual
HMI300-0-0-GB-00	:	Digital I/O Module Installation Manual

Ordering Information – for Cluster Combinations

Order the IPS Cluster that suits your application using these part numbers:

HCW930-0-0-GB-XX	:	1 x Wiegand RS485 + IP
HCW931-0-0-GB-XX	:	2 x Wiegand RS485 + IP
HCW932-0-0-GB-XX	:	3 x Wiegand RS485 + IP
HCL930-0-0-GB-XX	:	1 x Antenna RS485 + IP
HCL931-0-0-GB-XX	:	2 x Antenna RS485 + IP
HCL932-0-0-GB-XX	:	3 x Antenna RS485 + IP
HCI930-0-0-GB-XX	:	1 x Digital I/O RS485 + IP
HCI931-0-0-GB-XX	:	2 x Digital I/O RS485 + IP
HCI932-0-0-GB-XX	:	3 x Digital I/O RS485 + IP
HCW935-0-0-GB-01	:	1 x Wiegand RS485 + IP + Touch Screen
HCW936-0-0-GB-01	:	2 x Wiegand RS485 + IP + Touch Screen
HCW937-0-0-GB-01	:	3 x Wiegand RS485 + IP + Touch Screen
HCL935-0-0-GB-01	:	1 x Antenna RS485 + IP + Touch Screen
HCL936-0-0-GB-01	:	2 x Antenna RS485 + IP + Touch Screen
HCL937-0-0-GB-01	:	3 x Antenna RS485 + IP + Touch Screen

Example applications

Access Portal (AP) Lite example

Figure 1 shows a Combo Cluster (with the touchscreen option) serving as a stand-alone system controlling up to four doors with full anti-passback.
Authorised system operators can have access to the built-in AP Lite web application (in the Cluster Controller Module) via any Internet Enabled PC/laptop/cellphone that is running an HTML-8 compliant browser.

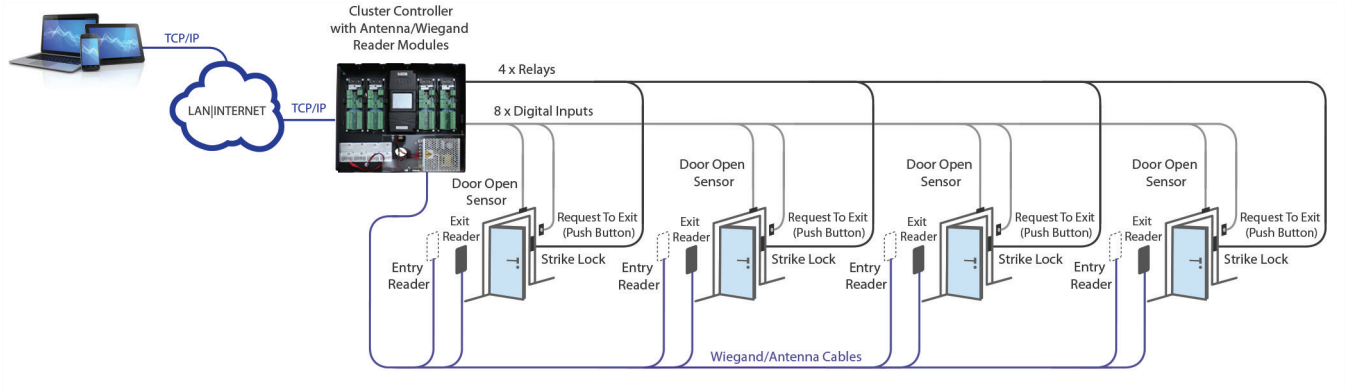

Figure 1: Access Portal Lite Stand-alone Antenna / Wiegand 4- Door Solution, with anti-passback

Access Portal Pro example

In this example there are three IPS Combo Clusters. Two of them are functioning as offline-capable door controllers for four doors each. Separate entry and exit readers provide full, anti-passback access control. The Third IPS Cluster (with four Digital I/O Modules) has 16 relays that are being used to control an elevator.

All three IPS Combo Clusters communicate with the Access Portal Software running on the server PC via TCP/IP (Ethernet).

Authorised personnel are able to access the Access Portal Server and maintain the system via any Internet Enabled PC/laptop/cellphone that is running an HTML-8 compliant browser.

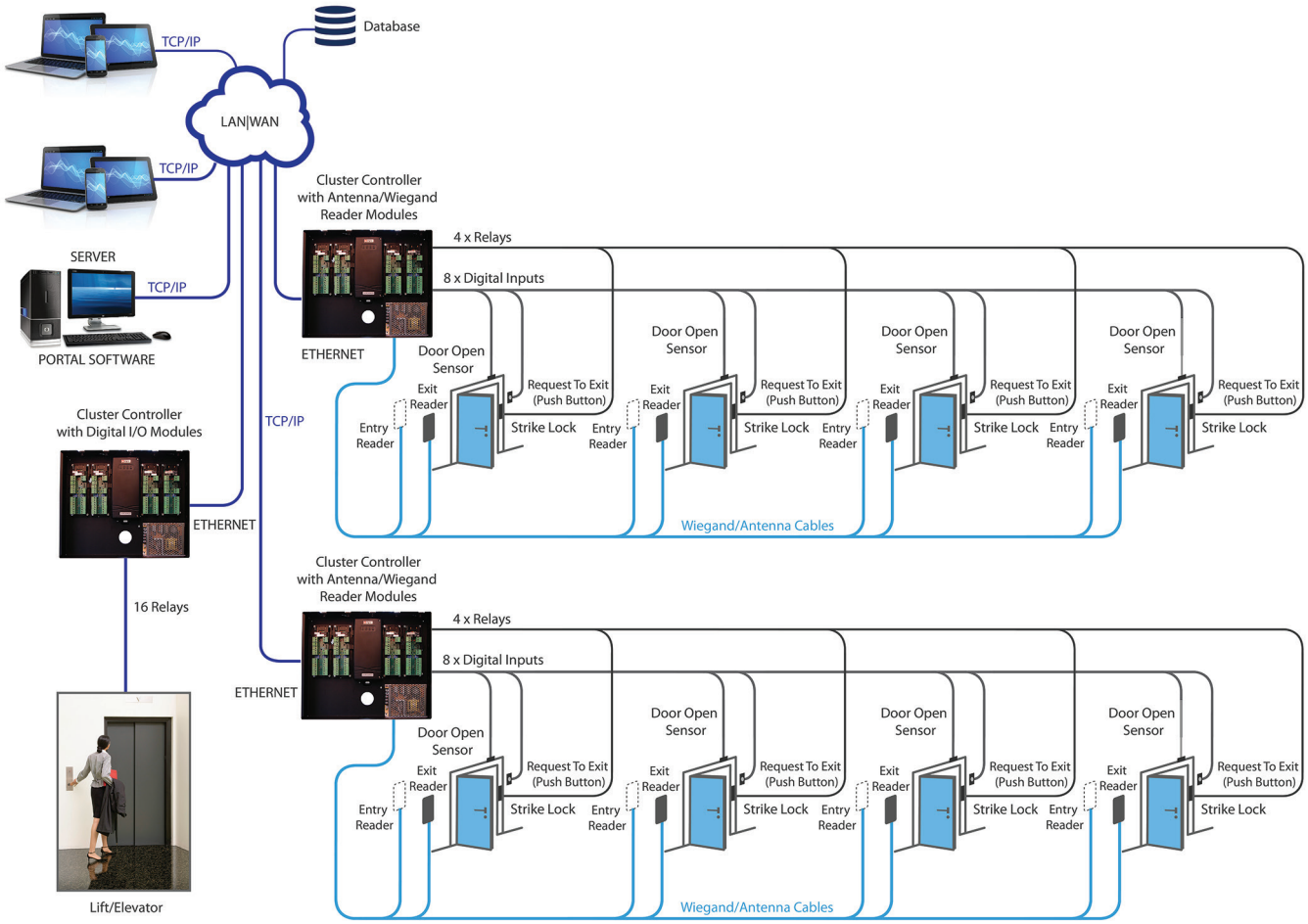

Figure 2: Access Portal Pro Antenna / Wiegand 2 x 4- Door Solution, with anti- pass-back – and 16-relay lift control

This Product Specification Catalogue applies to the IPS Combo Cluster Combinations: HCW930-0-0-GB-XX, HCW931-0-0-GB-XX, HCW932-0-0-GB-XX, HCL930-0-0-GB-XX, HCL931-0-0-GB-XX, HCL932-0-0-GB-XX, HCI930-0-0-GB-XX, HCI931-0-0-GB-XX, HCI932-0-0-GB-XX, HCW935-0-0-GB-01, HCW936-0-0-GB-01, HCW937-0-0-GB-01, HCL935-0-0-GB-01, HCL936-0-0-GB-01, HCL937-0-0-GB-01 (The last two digits of the Impro stock code point to the issue status of the document or product).			
IPS351-0-0-GB-01	Issue 2	October 2015	IPSW-psc-02.pdf