



PegaSys

Intelligent Access Control System



Ingersoll Rand Security Technologies is a leading global provider of products and services that make environments safe, secure and productive. The sector's market-leading products include electronic and biometric access control systems; time & attendance and personnel scheduling systems; mechanical locks and portable security; door controls, exit devices and architectural hardware; performance steel doorsets and automated openings; and other technologies and services for global security markets.

Progress is greener with Ingersoll Rand

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Creating Secure Environments

Ingersoll Rand Security Technologies is a leading global supplier of products and services that make environments, safe, secure and productive, protecting people, property and assets with solutions at every level of security.

We manufacture a complete range of electronic locks including the latest proximity doorset solutions and access control systems, all supported by a nationwide network of approved installers and service engineers enabling the provision of scheduled maintenance programmes to ensure our products perform to their best 'whole life' value potential.



Increasingly important in today's environment is to ensure accessibility for all, in particular people with disabilities. The **PegaSys** system can easily be interfaced with low energy operators and automatic doors on external entrance doors to provide ease of access for all users, helping you to meet the requirements of the Disability Discrimination Act (DDA). In addition, the **PegaSys** wall readers and validators use a combination of visual and audible confirmation to assist users that have either sight or hearing difficulties.

Access, [noun] - the condition of allowing entry

Control, [verb] - to restrict or regulate



Access control is the ability to manage who goes where and when.
 Do you know who has keys or codes to which rooms in your building?
 Do you know how many keys have been lost or copied over the years?
 Have you replaced your locks every time a key has been lost?
 Do you know if users have shared their codes?
 Do you know every time a key has been duplicated?
 Are you really in control of your access?

Putting you in control

In today's fast paced world one thing is guaranteed, nothing stays the same for long. It is vital that security is able to keep up with the fast pace of change, as buildings and workspaces need to be flexible and able to adapt to changing people and changing environments.

We understand the challenges that constant change brings to an organisation in terms of security and have many years of experience in providing solutions to help building owners keep pace with these changes. We also appreciate the commercial reality of providing increased levels of security and control whilst ensuring a cost effective solution.

Many building owners perceive the cost of an access control system to be incremental to a traditional cylinder based security system, but when the costs, let alone the inconvenience, associated with lost keys and replacement cylinders are factored in, this is often not the case.

Through our electronic locking systems we aim to provide a simple solution to your access control and key management problems, which will result in:

- No need to replace cylinder locks when keys are lost
- No more keys to carry round
- No need to patrol doors with keys at close of business
- Ability to fit access control units without additional drilling
- Easy installation of offline locks, no wiring required
- Ability to track movements through audit trails
- Peace of mind with optimum protection of assets and efficient access control

Our new **PegaSys** intelligent locking system provides many of the benefits of a networked hard-wired access control system in terms of functionality, flexibility, control and security, but at a fraction of the cost.

Whether you manage a hospital, university, leisure facility, airport, industrial or commercial building and whether you have one door or thousands of doors; a single site or multiple sites; our **PegaSys** intelligent locking system will provide you with a solution to meet your needs, which can be easily and economically upgraded as your requirements change. Thus providing you with peace of mind and allowing you to focus on what you do best – running your business.

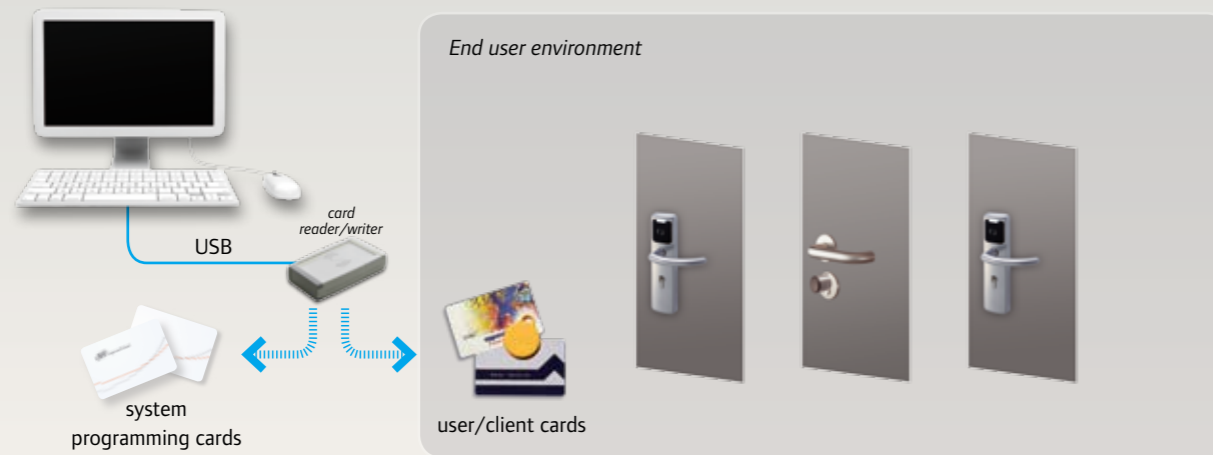
Simplicity, Flexibility and Control

The premise of the **PegaSys** system is why introduce complexity and cost when it is not needed. The system has been designed to allow you to choose a level of complexity to suit your environment and your access control needs.

The System Grows as You Grow

The beauty of the **PegaSys** system is not only its simplicity, but also its flexibility. Whichever level you choose initially, as your needs change it will be easy and inexpensive to expand your system in the future.

Offline Stand Alone



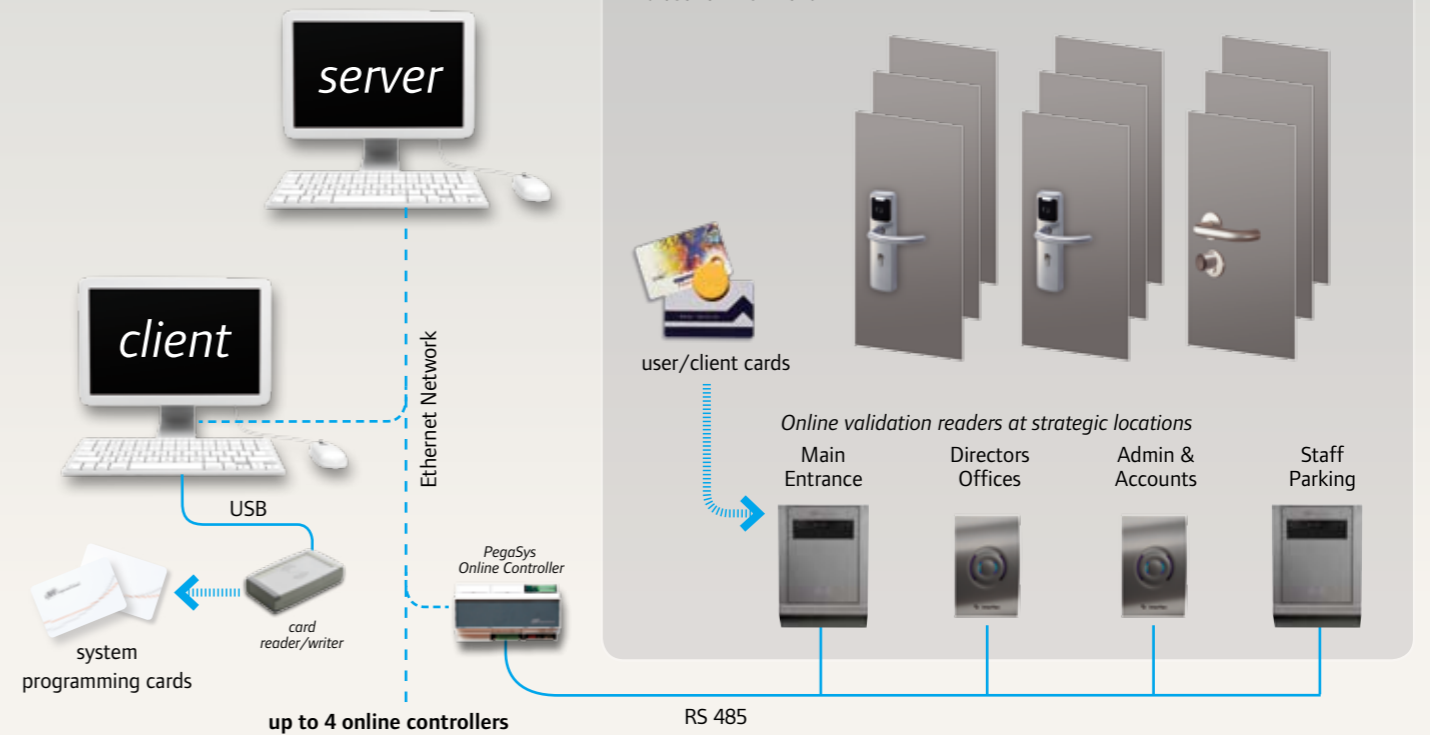
Offline Stand Alone

Our entry level system is simple and easily programmable, using stand alone offline electronic locks to provide a secure access control solution. As the locks are completely independent they can be used across multiple doors and multiple sites with no restrictions.

Operation

Each lock is completely stand alone and is programmed by a series of 'System Cards', which the system administrator presents to each lock. Additional cards are provided for system diagnostics and audit trail downloads. User cards are issued using a registration unit connected to the PC operating the system software.

Online Validation System



Online Validation (NetworkOnCard)

For facilities requiring additional functionality up to 4 online controllers can be incorporated, each capable of controlling 4 validation readers, fitted to your building's initial entrance and exit points or other strategic locations. These readers are used to download an individual's access rights for that day to their card, enabling them to access only the parts of the building they are authorised to enter.

Access rights can also be controlled by time, so that a person may only be given access to a particular room for a given time period, say for a meeting. Online validation also allows the system to be expanded to control multiple geographic sites through a central PC making it particularly suitable for facilities that need to change individuals' access rights on a regular basis.

Operation

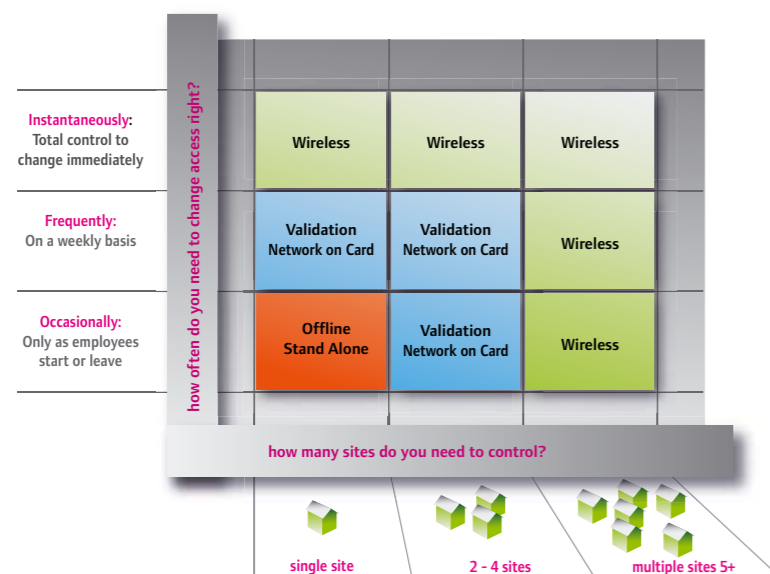
By adding online validators to the basic system an individual's access rights can be written to their user card on an hourly/daily basis. As the validators are connected to the PC software via online controllers, any access rights updates are immediately communicated to the validators and thus to the user cards at their next validation.

NetworkOnCard

The process of using the user cards to hold and transport access rights between the stand alone offline locks and the online validators is called 'NetworkOnCard'. This is an extremely effective means of providing many of the benefits of a hardwired online access control system without the additional hassle and costs involved.

Wireless Technology

A wireless version of **PegaSys** is also in development, which uses ZigBee technology (2.4 Ghz) to create a wireless network of locks, readers and transmitter, to provide a real time wireless access control solution.

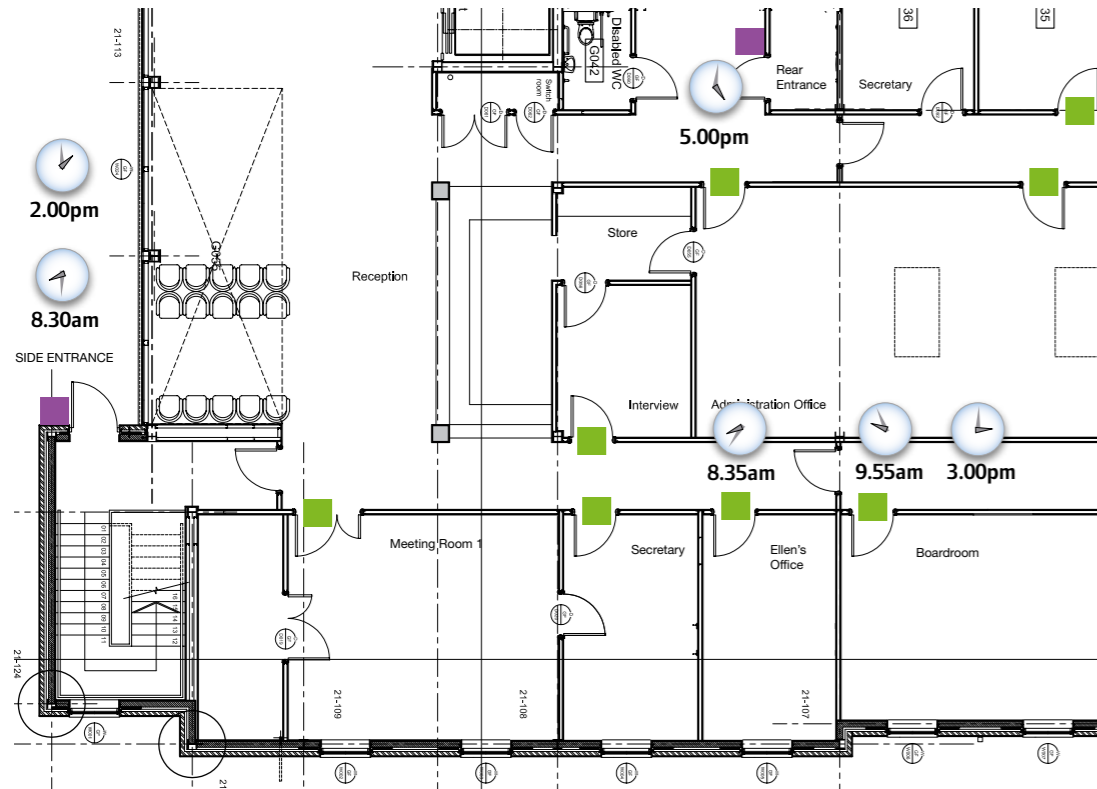


Which level do I need?

It's so simple that to get you started with the best solution to meet your facility's needs we only need the answer to two basic questions:

How many sites do you need to control?

How often do you need to change access rights?



- Online validation readers
- Offline locks at these doors

Our key focus in developing the PegaSys system was to reduce the time and level of expertise required to manage it, without compromising the functionality, flexibility, control or security.

Online Validation - How it Works

The following scenario takes you through a day in the life of a typical building and shows how our **PegaSys** system combines offline locks with online validation readers to achieve a virtual access control network.

As you can see the functionality of this system can eliminate the traditional problems associated with key control, meaning locks no longer need to be replaced when key or code security is breached. It can be used to manage up to 65000 users and up to 65000 doors.

8.30am	8.35am	9.55am	1.00pm	2.00pm	3.00pm	5.00pm	5.30pm
<p>Ellen arrives at work She enters the building by presenting her card to the online validation reader Her card is automatically re-validated with her access rights for that day as programmed into the system from the PC Ellen has a meeting in the boardroom so her card has been given temporary access to the boardroom from 9.50am</p>	<p>Ellen arrives at her office and unlocks the door using her card which has been validated to operate this lock The transaction is recorded in an audit trail on the lock The card records that the lock has a low battery</p>	<p>Ellen uses her card to access the lock on the boardroom door for her meeting at 10.00am The transaction is recorded in an audit trail on the lock</p>	<p>Ellen goes to lunch using her card at the validation reader to exit the building Her card transfers the message to the system controller via the reader that the lock on her office door requires a new battery Access to the boardroom is removed from her card</p>	<p>Ellen returns from lunch and realises that she cannot find her access card She reports her lost card to her site manager who immediately black lists it from the system and re-issues Ellen with a new card</p>	<p>Ellen realises she has left a file in the boardroom She returns to the boardroom but finds she is unable to open the lock as her access rights have expired The failed transaction is recorded on the lock's audit trail Ellen must seek authorisation to re-enter the boardroom</p>	<p>Ellen finishes work using her new card to exit the building PegaSys electronic lock records her egress and adds it to its audit trail</p>	<p>At 5.30pm the access rights on Ellen's old card are timed out and her old card will no longer be able to access the building</p>

Expanding System Functionality

To enhance the useability and convenience of the **PegaSys** system we have a program of on-going product development aimed at introducing system upgrades and enhancements to further improve its functionality and ease of administration.



Netbook Solution

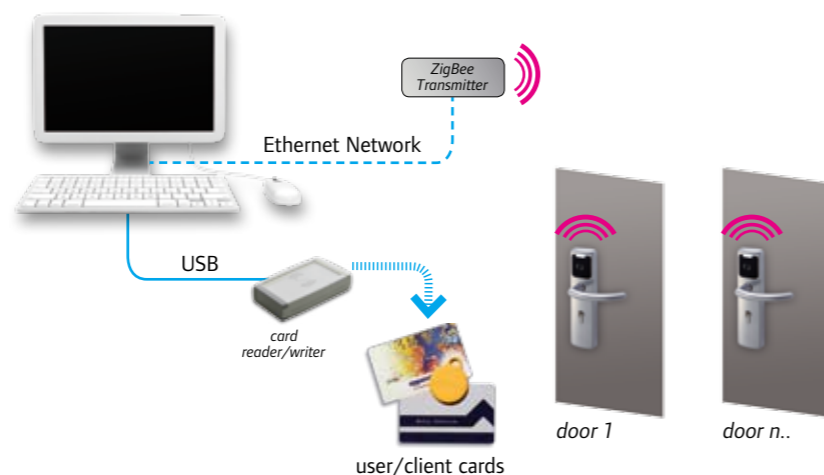
To provide added convenience to the system administrator we will soon be introducing a reader to reader interface providing the ability to manage your offline locks using a hand held netbook or laptop PC to update the locks utilising RFID technology. This replaces the requirement for the system cards and makes updating and interrogating your locks quick and easy. The netbook will also provide a checklist to the system administrator of their maintenance requirements, including updates, such as firmware, date and time synchronisation, battery status and diagnostics.

Users who are currently using the standard system programming cards will be able to upgrade to the new Netbook solution at any time without having to alter their system.

Wireless Networking

For facilities requiring real-time control of their sites and access rights we are developing a wireless expansion for the **PegaSys** system. Wireless antennas will be incorporated into the locks, which will use ZigBee radio technology (2.4 Ghz) to allow the offline readers to connect with the online access control software to provide a real-time wireless access control system.

The wireless system will provide added convenience for facilities with a large number of doors and/or multiple sites to control. Sites using our standard **PegaSys** system will have the ability to easily and economically upgrade to a wireless system in the future if required.



PegaSys Credentials & Software

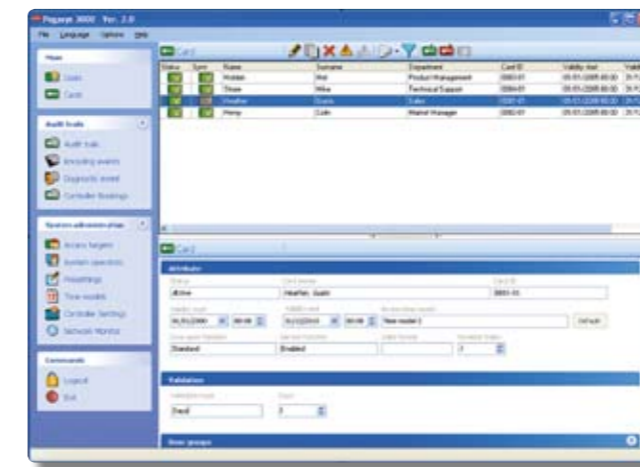
Due to its high level of security we supply our **PegaSys** systems with Mifare DESFire cards as standard. These incorporate AES encryption, which is the most secure form of encryption currently available and offers quick data transfer times.



Flexible Credentials

A key advantage of the PegaSys system over similar solutions is the flexibility to use existing Mifare Classic/Legic cards that may already be in existence. As the **PegaSys** system only takes a small amount of space on each card (64 bytes depending on credential) there is plenty of spare capacity for other applications such as cashless vending. This capability provides not only added convenience to facilities managers and users, but can also have a significant economic advantage.

We can also customise cards to incorporate your company logo and designs to suit your individual requirements.



PegaSys Software

Supplied as standard the P3K software is simple to install and use, and will work off any PC running Windows 95,98,NT,XP or Vista.

PegaSys System Hardware

With a choice of hardware options available, the **PegaSys** system can be easily tailored to the needs of your facility in order to provide the most cost effective, stylish and hassle free installation.

Electronic Cylinders

These can be used to replace existing mechanical cylinders to provide a quick and simple conversion to an electronic lock. Available in single, double, double with thumbturn and cabinet styles these mechtronic cylinders can be easily installed into existing lockcases in 3-5 minutes. They are IP 65 rated making them suitable for indoor and outdoor applications.



PegaSys System Hardware

Each **PegaSys** system can be composed of any combination of the hardware elements shown on these pages to suit each door and application.

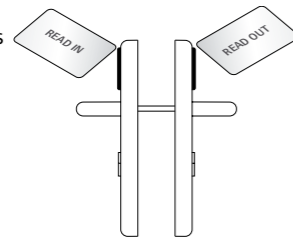
All electronic elements are CE marked.



Electronic Locks

Our **PegaSys** electronic locks are the ideal solution for facilities where aesthetics are important. The size of the lock has been calculated to cover any existing door preparations ensuring a stylish finish without having to replace or fill the existing door. Manufactured in 1.8mm stainless steel they are not only stylish but a durable and robust solution, making them suitable for heavy doors. A narrow version is also available for use on aluminium doors with narrow stiles. Supplied without the mechanical lockcase as standard for use with existing hardware, we can also supply the appropriate mechanical lockcases should they be required.

These locks can also be mounted back to back to allow cards to be read at both ingress and egress. As the readers are independent of each other, separate audit trails allow you to interrogate both comings and goings at your facility.



For added convenience in non sensitive areas each lock can be set for free access during office hours, should that be required.



Hardware Choice

The **PegaSys** electronic locks are available to suit both standard and narrow frame doors and can be supplied with a choice of lever designs. It is also possible to select a number of mounting variants, centre sizes and internal handle options (see pages 11 and 12 for further information)



Validation Readers

The online validation reader allows access rights to be changed on a daily basis (or more frequently should you require). They should be placed at all entrance points to the building or site, but can be placed at other locations such as canteens or staff rooms, to suit your facility and its users. Whenever a user presents their card to the online reader a read/write process takes place to update the card's access rights and to collect information from the offline locks that has been transmitted onto the card, for example low battery status. Up to 4 validation readers can be used with each online controller up to a maximum of 16 readers.

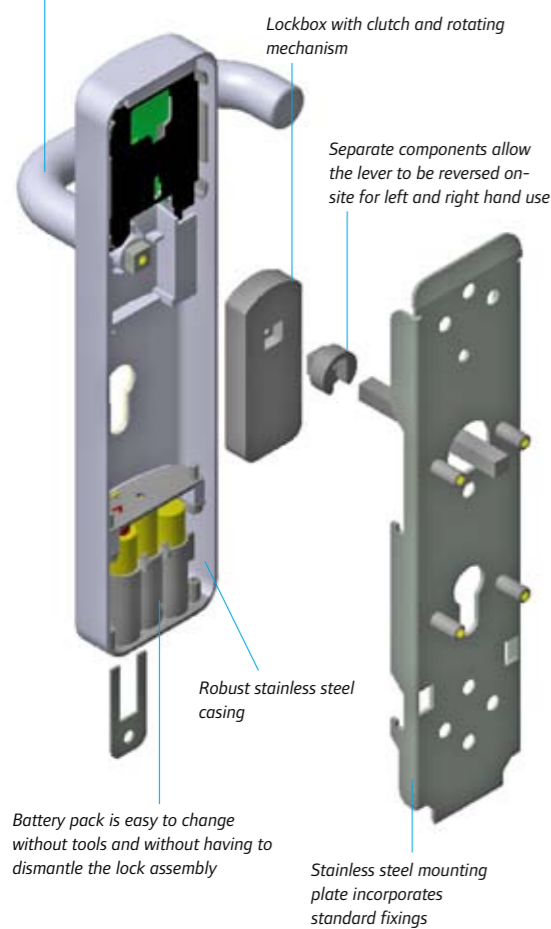


Electronic Wall Readers

Electronic wall readers are ideal for locations such as garage openings, roller gates, lifts, automatic doors and equipment. They can be used to operate electric strikes and magnets as well as to prevent unauthorised use of machinery, helping to meet health and safety obligations. Suitable for both indoor and outdoor use they are IP 65 rated.

PegaSys Features & Benefits

Interchangeable handle is available in a selection of styles



Security

- Ability to control both access and egress
- Electronic locks store the last 2000 bookings (audit trail)
- 'NetworkOnCard' principle where all authorisations are stored on the ID card
- Non cloneable cards due to AES encryption (with Mifare DESFire only)
- Additional security through time validation
- Controls access against intrusion without slowing down activity/productivity
- Door handle mounting plate can be bolted through the door for additional security

Durability

- Robust construction suitable for demanding and high traffic applications - unit casing is 1.8mm thick grade 304 stainless steel (grade 316 stainless steel is available as an option)
- Battery life is 50,000 to 75,000 bookings (electronic lock) and 20,000 to 25,000 (electronic cylinder); depending on use
- Bolt through fixings on roses and backplates increase strength
- Clutch mechanism tested to 60 Newtons
- Electronic locks are IP rated 54 (protected against ingress of dust and water sprayed from all directions - limited ingress permitted).
- Electronic cylinders and wall readers are IP 65 rated (totally protected against the ingress of dust and against low pressure jets of water from all directions - limited ingress permitted).

Ease of Installation

- Electronic cylinders can be used to simply replace existing mechanical cylinders
- Ability to choose from different hardware solutions to best suit the requirements of each door: flexible, convenient and economic
- Offline electronic locks are self contained and do not require wiring
- Electronic lock has standard fixings for roses and short and long backplates
- No damage to door leaf at installation when using e-cylinder or electronic lock with 75mm or 85mm centred lockcases
- Electronic lock is suitable for all doors with backsets greater than 30mm (narrow stile version available for smaller backsets)
- Modular construction of electronic lock means that components are extremely simple to replace without the need to return the lock, making them very easy to service
- Electronic lock can be handed on site to suit left and right hand applications – there is no need to return the lock for handing
- Electronic cylinders can be installed in 3-5 minutes

PegaSys Features & Benefits

Convenience

- Existing mechanical security can be quickly converted to a PegaSys electronic solution
- Quick and easy 10 second battery change without the need for tools or removing the lock from the door (see below)
- Communicates low battery status of locks onto cards to advise site manager on daily basis
- Automatic change to daylight saving time
- Can incorporate various reading methods – Legic, Mifare Classic, Mifare DESFire
- Permanent battery status control
- Activation and opening time approx 0.5 seconds due to small size of data required on card
- Validation is clearly signalled by a visual and audible signal at the reader
- Door open time can be varied to suit your requirements
- Office mode can be automatically time controlled to close at the end of the working day



Peace of Mind

- Certified accreditation to EN1634-1 (fire and smoke stop doors)
- All electronics are CE marked
- Electronic locks are cycle tested to 200,000 cycles for lifetime endurance
- Emergency cylinder override on electronic locks can be supplied to suit individual requirements
- Panic function is always available to ensure emergency egress when required
- Electronic lock can be used as an outside access device with exit hardware for use in EN179 and EN1125 situations, however we recommend that you check compatibility before ordering
- Use of Mifare DESFire with AES encryption means cards cannot be cloned or hacked into
- 2 year guarantee on all hardware

Economical

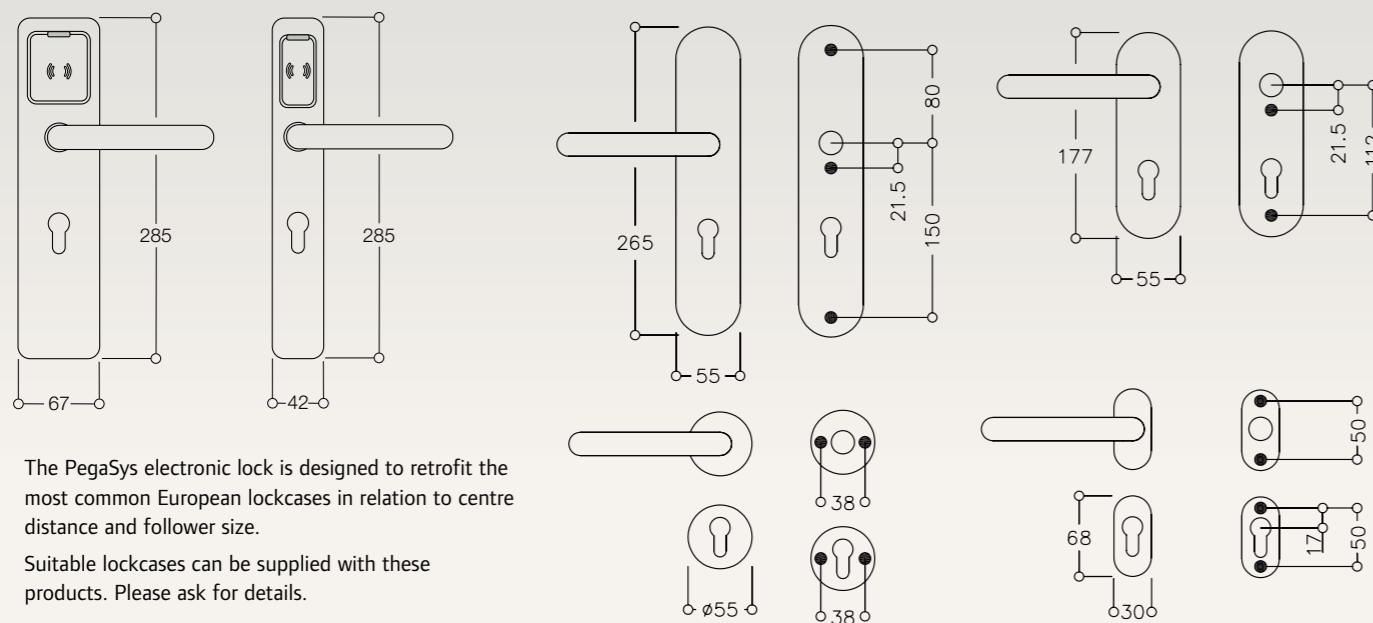
- Low cost of ownership
- Existing Mifare Classic or Mifare DESFire ID cards can be easily integrated into the PegaSys system
- The system requires only a small amount of the data space on any proximity card ensuring there is plenty of space available for other applications
- System can be easily expanded to adapt to changing needs
- Provides 'online' functionality at a fraction of the cost of a hard wired access control system
- Modular construction of electronic lock means that components can be replaced at low cost without returning the lock for refurbishment
- Electronic lock has activation sensor with contactless reading technology to extend battery life



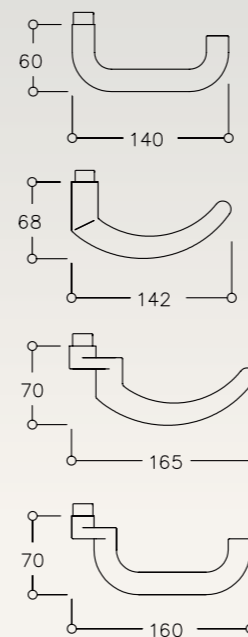
Aesthetics

- Choice of stainless steel handle designs to suit your facility
- Choice of internal mounting styles including roses, short and long backplates
- Choice of lever sets available to suite with inner door furniture, including designs recommended by BS8300 helping you to meet the requirements of the Disability Discrimination Act (DDA)

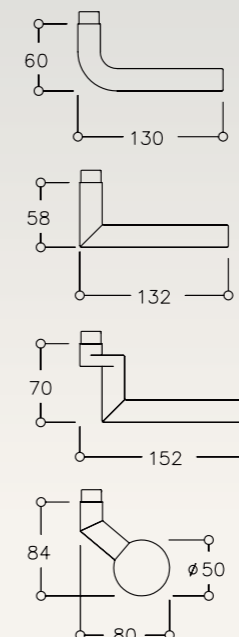
Technical Data



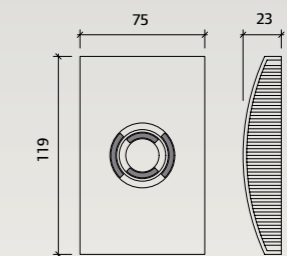
Standard lever types



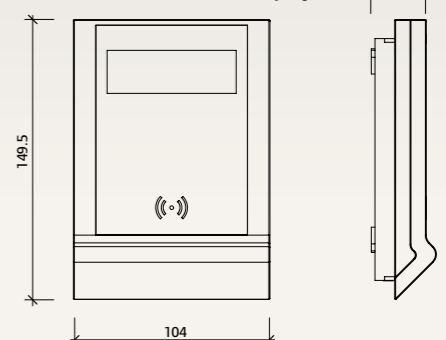
Optional lever types



Electronic Wall Reader and Online Validator



Online Validator with Display



Installation, Maintenance & Support

Ingersoll Rand Security Technologies is renowned for supplying solutions which offer exceptional reliability and longevity.

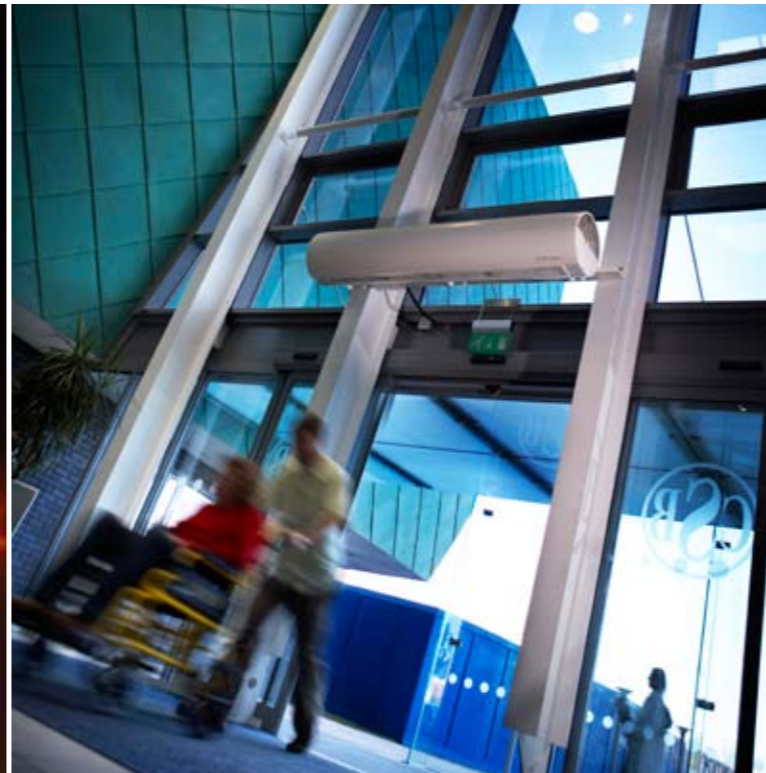
This is backed up by an unrivalled level of technical support at all stages of specification and supply.

Utilising the latest advances in sustainable materials technology our products meet, indeed exceed, all current EN standards, regulatory and best-practice guidelines; as well as performing to many other high performance criteria.

This is not the end of our involvement however.

After manufacturing and supplying products which help to make our environments safe and secure, we are passionate about ensuring that they are installed correctly and maintained long term.

We have partnered with a carefully selected network of Approved Installers, who can advise you on your system requirements, project manage the installation and provide scheduled maintenance should you require it. A scheduled maintenance regime is a simple yet vital element in the sustainability of any facility and fundamental in achieving best whole-life value. Potential risk associated with damage or impaired performance is negated; original safety and security specifications and environmental efficiencies are maintained.



Integrated Solutions

As an integral part of the Ingersoll Rand corporation, a diversified industrial concern with annual operating revenues of some \$17 billion we understand construction and we understand security.

Ingersoll Rand Security Technologies offer a fully co-ordinated package of products and services that create and sustain safe, secure, comfortable and productive environments. We are a single, reliable source backed up by a global corporation and a fully qualified support team. Our quality products, services and solutions include mechanical and electronic locks, access solutions, heating, ventilation and air conditioning systems, advanced controls, portable security systems and remote building management. All products are compatible and can be tailored to create a fully integrated solution to your particular needs.

In this way we provide market driven solutions across a wide spectrum of sectors, including Commercial, Healthcare, Education, Transport, Hospitality and Residential applications.

Ingersoll Rand embraces robust processes and metrics across its entire global organisation – however we don't expect you to take our word for it. Reassurance, where it needed, comes in the form of controlled activity monitoring and independent auditing against strict Sarbanes-Oxley criteria (SOX404) for financial, commercial, ethical and environmental practices.

'Companies that have more confidence in their control structure and are evaluating accounting risks enable investors and customers to have more confidence in their reliability'.

Naturally we have ISO9001 and ISO14001 accreditation.

