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Welcome & Year in Review

Philip Verner
Sales Director



Johnson Controls 





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New Software & Hardware Platforms

- AC2000 v6x – v6.9 EOL
- S610 EOL
- Other hardware (POE+ / Lift Control / IOC)
- New Portable handheld reader





Smart Technology



Threats and Cyber Security



Interoperability



What's Next?





***“Security is always excessive,
until it’s not enough!”***



09:10	Welcome & Introduction	Philip Verner
09:30	AC2000 Software Update	Maggi Chesney
10:00	AC2000 Time Hub	Marc McNicholl
10:15	AC2000 Security Hub, Integrations and OEM	Richard Lindsay
10:40	<i>Tea/Coffee Break</i>	
11:10	CEM Hardware Update	Ian Schofield
11:35	Biometrics Update	Albert Janicki
11:50	American Dynamics Video Update	Allen Houston
12:10	Magos Radar Applications	Eric Hampel
12:25	Physical and Cyber Security Threats	David McCord
13:00	<i>Lunch</i>	
14:00	Tyco Facial Biometrics – Frictionless Access Control	Allen Houston
14:15	Anti-drone Solutions	Gilad Sahar
14:30	Breakout to demo exhibitions	Group Activity
15:30	<i>Tea/Group Photo followed by Tea/Coffee</i>	
16:00	Emerald terminal update – Beyond Security	Paul Sheeran
16:20	RTLS ' Real Time Location Services'	James Murphy
16:35	CEM Systems Partner Awards	Philip Verner
16:50	<i>Day 1 Close</i>	



09:30	CEM Systems Software Roadmap	Maggi Chesney
10:00	American Dynamics Video Raodmap	Allen Houston
10:20	<i>Tea/Coffee Break</i>	
11:00	Exacq Video Cloud Solution	Paul McCann
11:20	CEM Systems Hardware Roadmap	Ian Schofield
11:50	Closing and Thanks	Philip Verner
12:00	<i>Lunch</i>	

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Site video



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Q&A Tool - Sli.do



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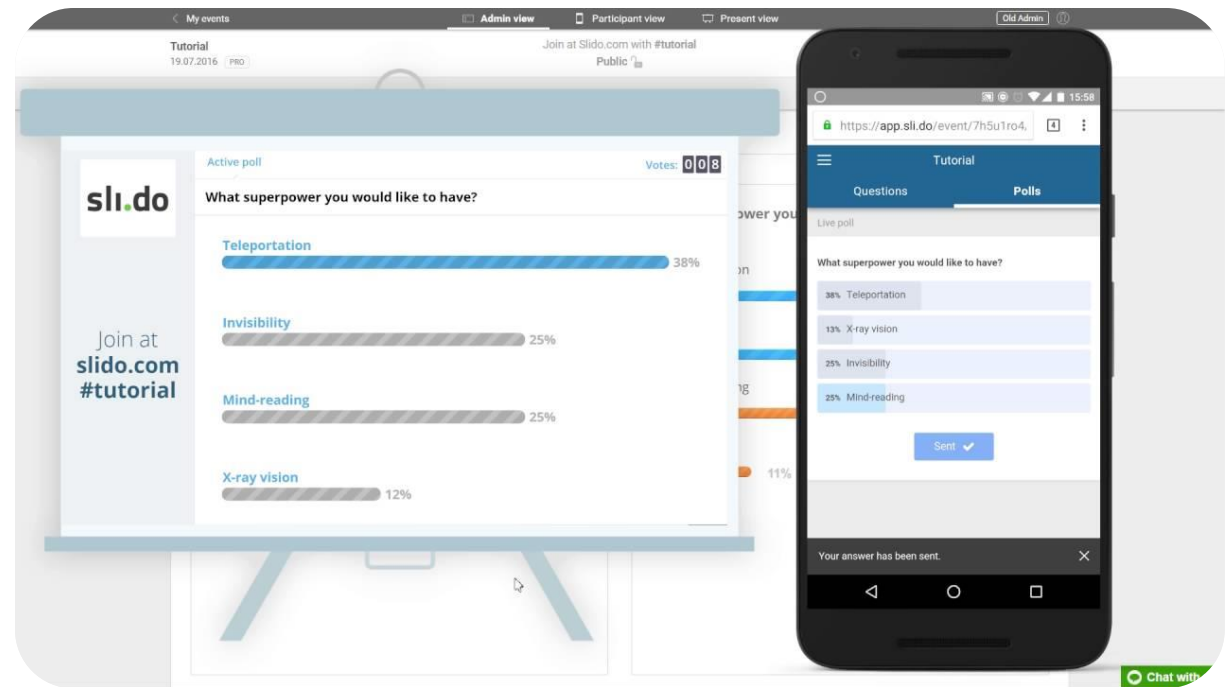


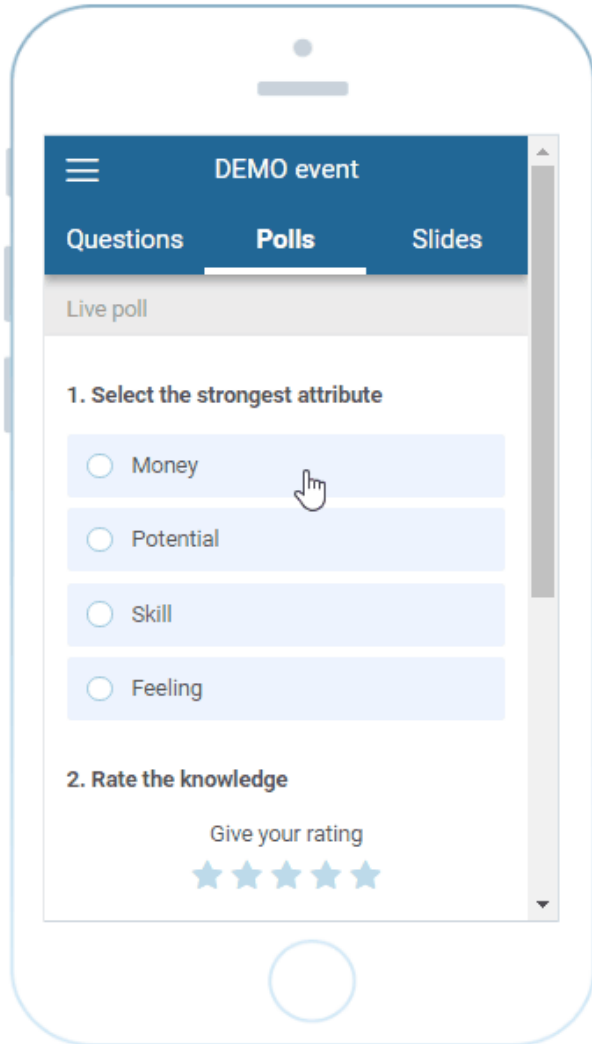
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- **Slido** is accessible via any internet enable device (phone/laptop/tablet)
- Allows you to participate in polls and submit questions and comments via your device throughout the conference
- We will respond to a selection of questions at the end of each day
- Several polls will be held throughout the conference
- Results will be shown in real-time





- Please go to the following URL on your device:

www.slido.com

- Enter event code:

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- To ask a question at any time please select the 'Questions' tab
- When prompted to answer a poll please select the 'Polls' tab



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Thank You



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AC2000 Software Update

Maggi Chesney



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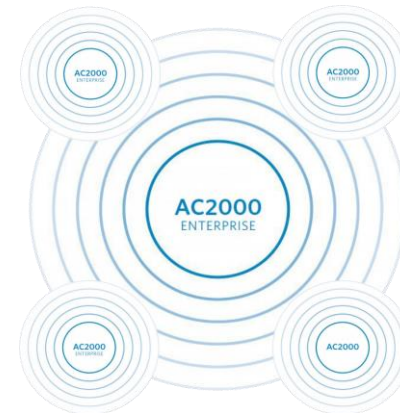
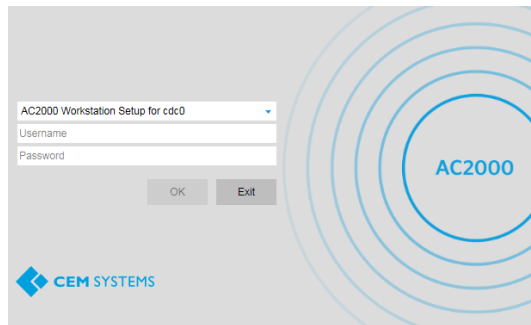
V10.0 – released July 2018



V10.1 – released January 2019



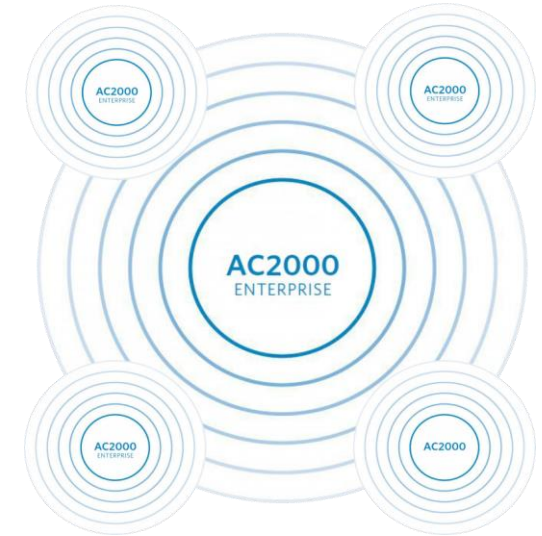
V10.2 due for release July 2019





Key Features in V10.0

- New appearance – C# applications
- Enhanced Enterprise functionality
- Stronger data controls – UN-limited User groups
- Visitor escort

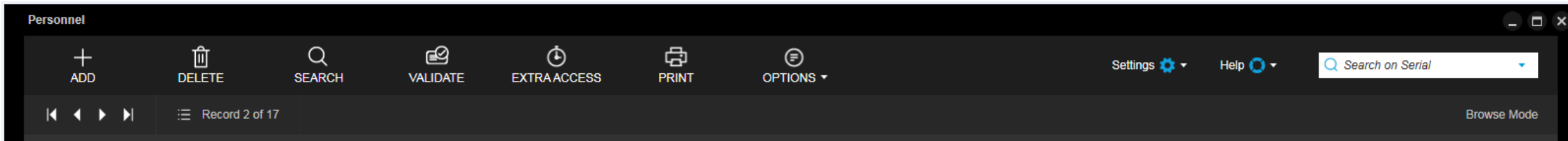


THE NEW LOOK AC2000

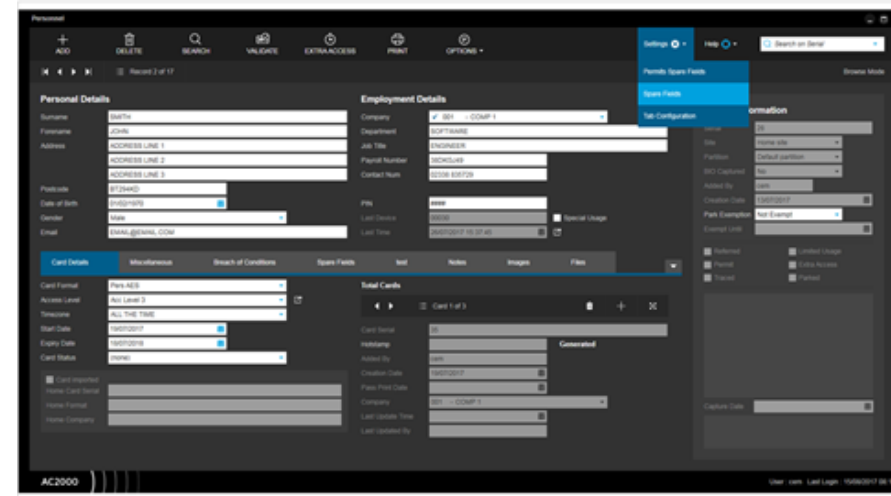
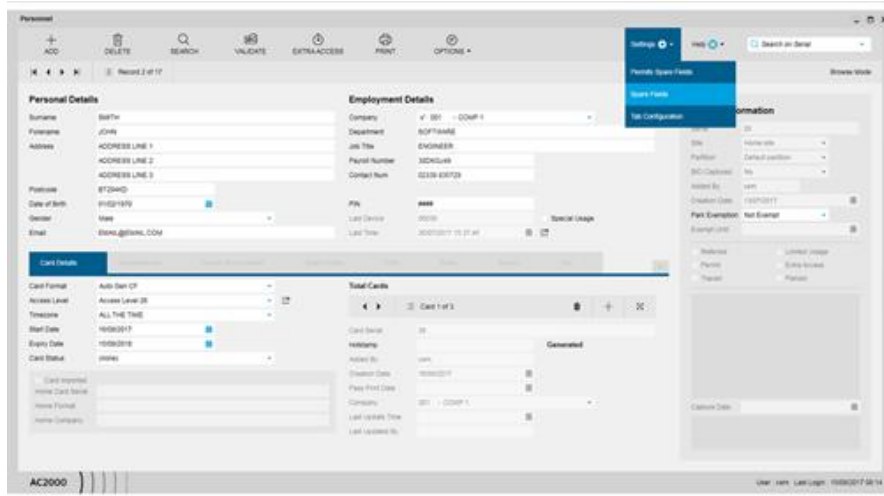




- New Theme, Controls and Icons applied to all C#/workstation apps



- Each operator can choose between dark or light theme (configured on floatbar)
- Default is dark theme





Global Security Hub – Centralised alarms

Use Sec Hub on the Enterprise Server, to see maps, devices & alarms from ALL sites

Enterprise Access Levels

Add Extra Access on global Enterprise Server – can apply to all Local sites

Global Oneshots & Broadcasts

Ability to open any door from the Global Enterprise Server

Global Reporting

e.g. run a Transaction report for a person or a company to see their activity across ALL sites.



Global Enterprise Server

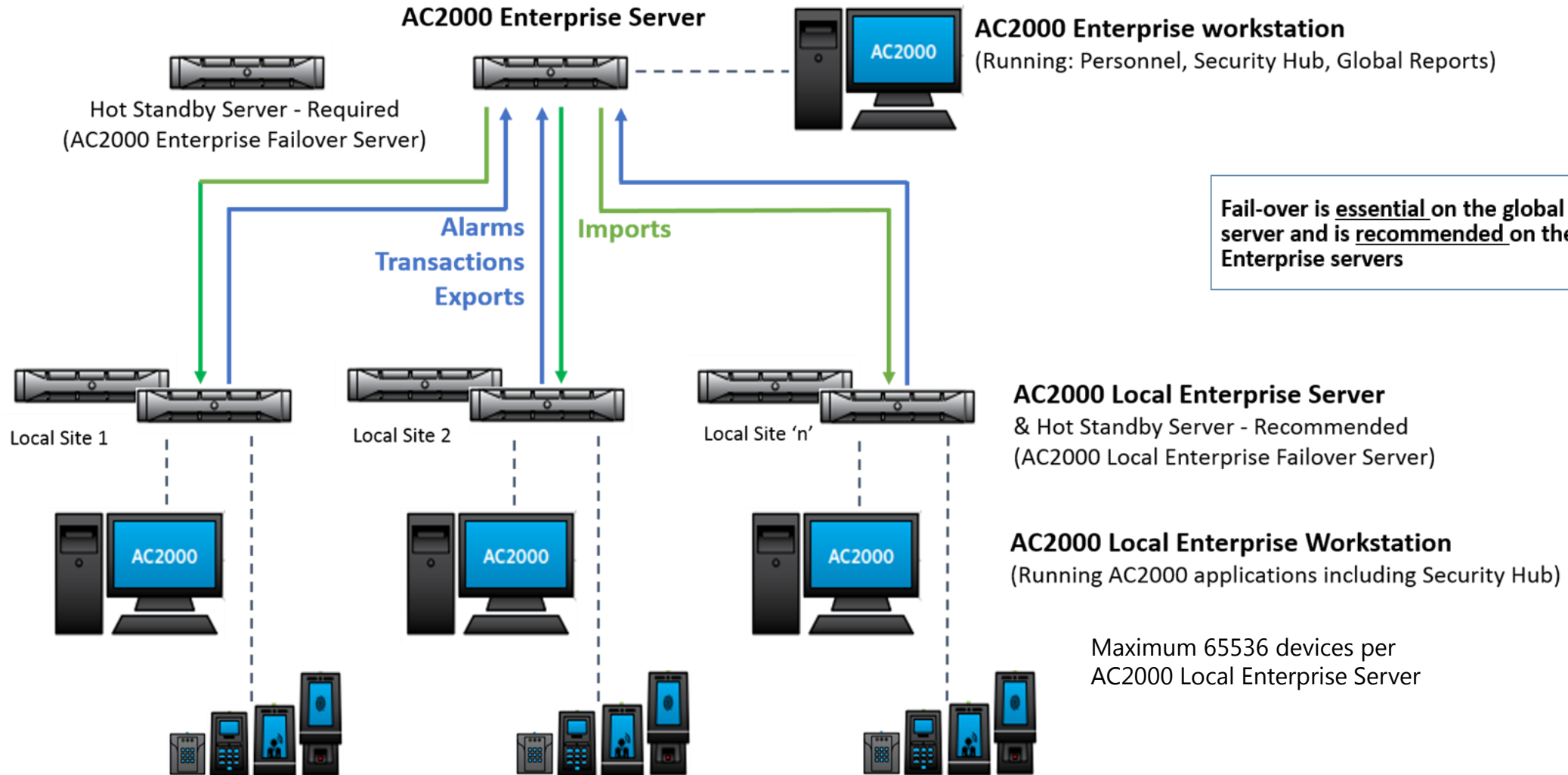
Personnel/ Card Exports

export records from each Local Enterprise server to some or ALL of the other Enterprise Servers

Multi-version support for ease of upgrading

Enterprise link functionality will continue to function when you upgrade 1 site to say v10.1 leaving the other sites running v10

V10.0 Enhanced Enterprise



Fail-over is essential on the global Enterprise server and is recommended on the Local Enterprise servers



- **Additional Application & Field Checkpoints added** to Web & Client apps so System Administrators can control access to personal data



- **5 Authorisation levels → Unlimited User Groups**

- Now no limit to the number of independent User Groups that administrators will be able to define
- User Groups are defined in the User Options app in terms of
 - Applications – which apps appear on the floatbar
 - Application Check Points – within each app which functions the operator can perform e.g. Add, Edit
 - Field Check Points – within each app which fields the operator can see and if visible Edit
 - Oneshot Restrictions – limit which devices this group of operators can oneshot
 - Company Restrictions – limit the set of companies this operator can see in Personnel



Concept: Every time a visitor swipes, the assigned escort must also swipe before the door opens

- A configurable feature – the System Administrator can specify whether an escort is **always** required, **never** required or **optional** (escort_mode in configured)

- Each visitor can have only 1 escort associated with them

- However, a card holder can be an escort for many visitors.

Even if the visitors are un-related, multiple visitors can swipe followed by 1 escort swipe and provided that the escort is a valid escort for all, the door will open.

- Supported on all card readers connected to the RTC (except for bio readers)

- This means 3040s, devices connected to 90x0 and lift readers do not support this functionality as they are not connected to an RTC





Surname/Registration Number	Forename/Make	Company	Device	Device Location	Outcome	Event Time	Job/Model
GIBSON	PAUL	ACME COMPANY	00000	belfast front door	Wrong escortee	27/04/2018 16:07:28	MANAGER
CUNNINGHAM	TREVOR	CATERING	00001	rewtwet	Other head in use	27/04/2018 16:07:09	
CHESNEY	MAGGI	CEM SYSTEMS	00000	belfast front door	Wrong escort	27/04/2018 16:06:47	SOFTWARE MANAGER
GIBSON	PAUL	ACME COMPANY	00000	belfast front door	Escort valid	27/04/2018 16:02:39	MANAGER
CHESNEY	MAGGI	CEM SYSTEMS	00000	belfast front door	Escortee valid	27/04/2018 16:02:18	PANDA
GIBSON	PAUL	ACME COMPANY	00000	belfast front door	Escort valid	27/04/2018 16:01:24	MANAGER
CHESNEY	MAGGI	CEM SYSTEMS	00000	belfast front door	Escortee valid	27/04/2018 16:00:48	PANDA

- **Escort Timeout** – escort did not swipe within 30 secs of the visitor swipe
- **Escortee invalid** – used on escort swipe when the visitor card was not valid
- **Escort invalid** – used on visitor swipe when escort card is not valid
- **Wrong Escort** (visitor swipe), **Wrong Escortee** (escort swipe) – not a matching pair
- **Escort Valid** (escort swipe), **Escortee Valid** (visitor swipe)
- **Other head in use** occurs when a member of staff swipes on other side of while visitor escort process is underway





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AC2000 Software Update
Version 10.1
Released Jan 2019



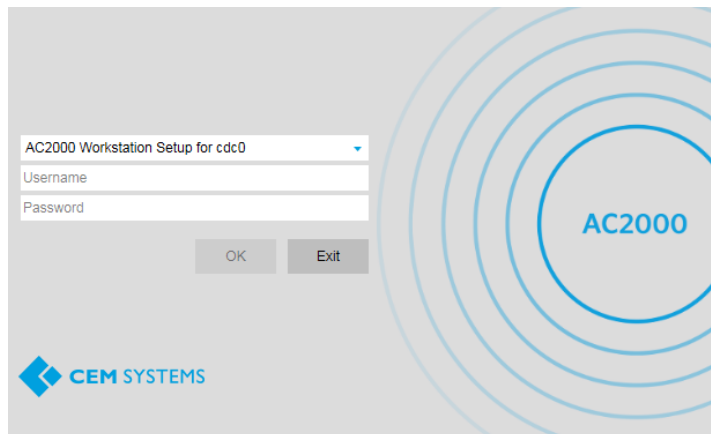
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Key Features in V10.1

- Web Personnel
- Remote apps – Local Access, Induction, Emergency Responders
- Zone Monitor enhancements
- RTD enhancements
- Simons Voss wireless locks
- Restful API & API enhancements
- Various other changes





Personal Details

Surname * OLIVER Forenames SHARRON Serial (Person) 2

Address (1) Address (2) Address (3) Postcode

Date of Birth Gender (none) Email PIN * 3024

Payroll Number Contact Number

Employment Details

Company	Department	Job Title
CEM SYSTEMS LIMITED		

Card Details Card 1 of 1

Card pending validation.

Reusable Card Format.

Company CEM SYSTEMS LIMITED Card Format Management Format Access Level Management Staff Timezone ALL THE TIME

Start Date 25/04/2017 Expiry Date 24/04/2018 Card Status (none)

Serial (Card) 2 Hotstamp Added By (Card) cem Creation Date (Card) 25/04/2017

Pass Print Date Last Update Time (Card) Last Update Time (Card) (hh:mm:ss) Last Updated By (Card)

ID Text1 ID Text2 ID Text3 ID Text4

V10.1 Core Functionality:-

- Find
- Edit
- Add & Remove Extra Access
- Support for on-line validation
- User defined fields
- NEW 'Operator Access Control' feature



This feature enables the System Administrator to specify which access levels a system user is able to assign as extra access.

Use Case – imagine a manager is only allowed to assign access to their area and nowhere else.

Any user who cannot assign ALL access levels is designated a **Restricted User** which means he/she cannot add or edit primary access.

In addition to Web Personnel, this new functionality is also supported in web Visitors, client Personnel & Visitors app and the Local Access web page

It can be configured in both Web & Client User Options.

The screenshot displays the 'Users' management interface. On the left, a tree view shows the hierarchy: Default partition > ADMIN > Engineer. The 'Engineer' user is selected. On the right, the 'Details' panel is open to the 'Access Restrictions' tab. Below the tab, there are radio buttons for 'Group Restrictions' (selected) and 'User Restrictions'. A table lists various access levels with checkboxes for 'Denied' and a 'Description' column.

Denied	Description
<input checked="" type="checkbox"/>	Internal Office doors
<input checked="" type="checkbox"/>	Server Rooms
<input checked="" type="checkbox"/>	Stores
<input type="checkbox"/>	Canteen
<input type="checkbox"/>	No access
<input type="checkbox"/>	Parked
<input type="checkbox"/>	Perimeter Access

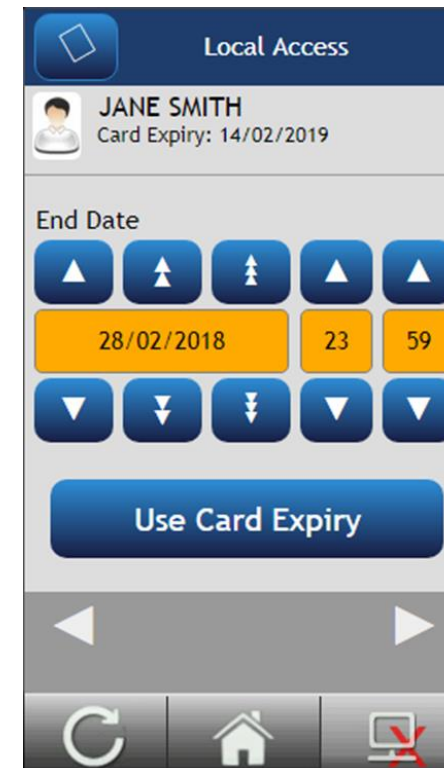


- Enhanced due to requirements for a major project in HK with 103 locations with AC2000 readers but no workstation. Managers needed to control access to their location

Solution – install an emerald & use the enhanced Local access app which allows Manager to assign access to specific card holders for their area

Enhancements

- Immediate Extra access if start time is **now**
- Separate Day, Month, Year selectors
- Option to “Use Card Expiry” for the Expiry Date
- Now possible to EDIT local access
 - If future – you can edit both start and expiry
 - If active or past, you can only edit the expiry date
- Now also possible to REMOVE active or future local access

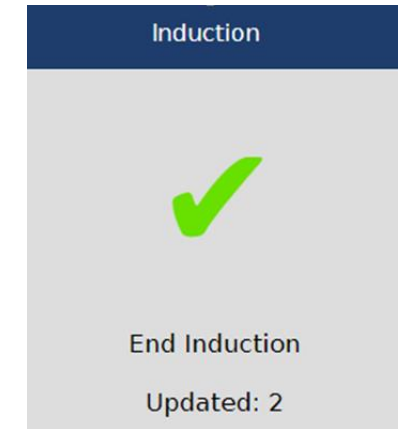
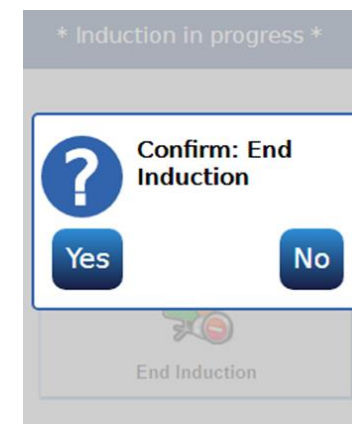
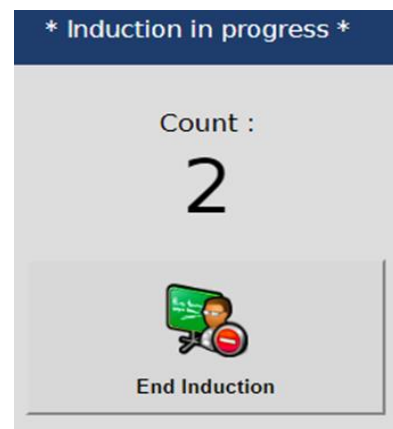
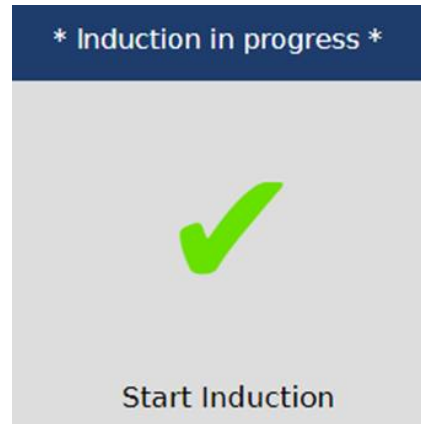
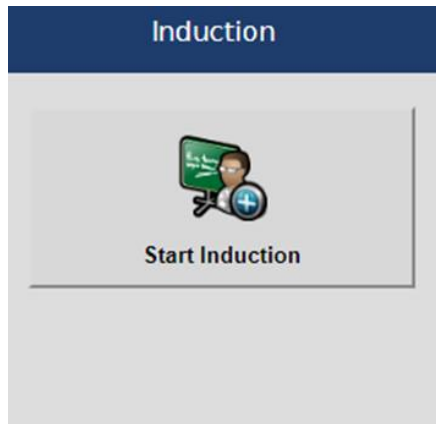




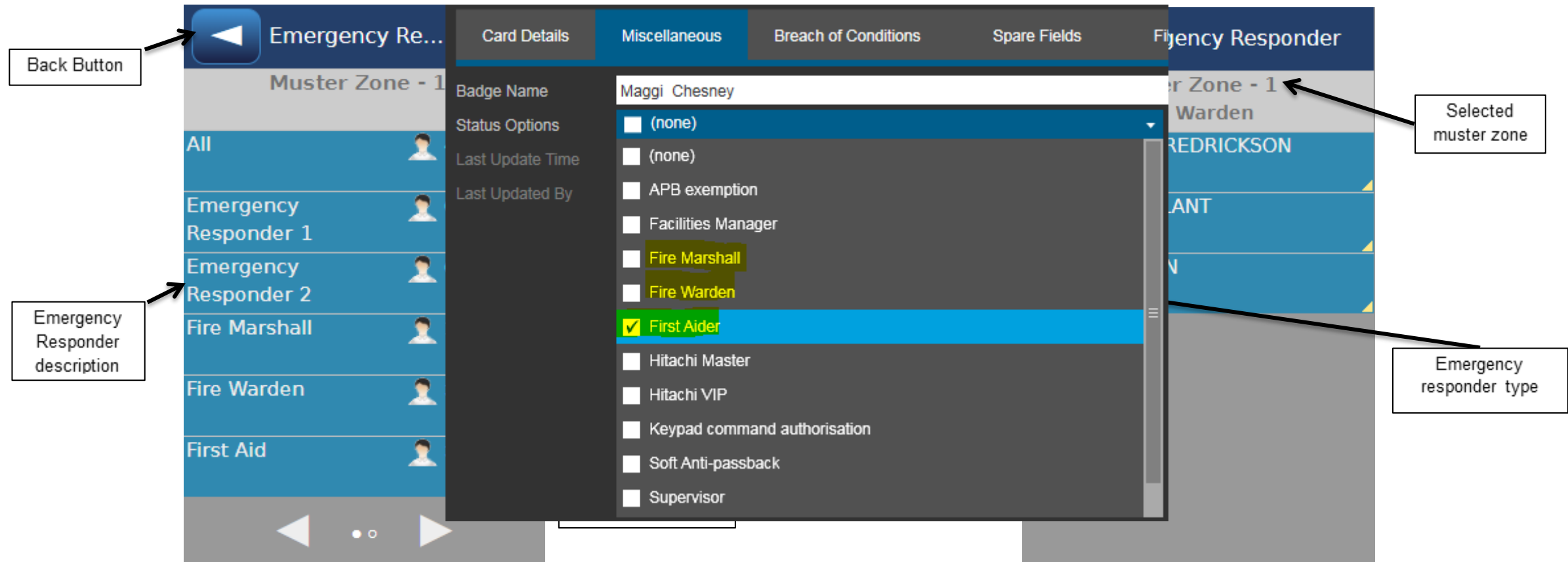
Problem – No accurate records of when employees last attended Induction training

Solution – New Induction remote app

- Nominate a field on the Personnel app to store Induction Training Date
- Card holders swipe on emerald to indicate they have attended the Induction training.
- Emerald automatically updates their Induction Training Date on the Personnel app.



- Could be used for other purposes



■ New Emergency/First Responders remote app

- It is possible to specify in Personnel, which card holders are First Responders
- Select a Zone and 1st Responder type(s) e.g. Fire Marshal or First Aider. The remote app will list which 1st Responders are currently on site

Emergency Responder in Zone Monitor



The screenshot displays the 'Zone Monitor' application window. At the top, there are navigation buttons: 'REMOVE FROM ZONE', 'EXPORT', 'PRINT', and 'CONFIGURATION'. A search bar labeled 'Filter by Name' is also present. The main content area shows a 'Multi Zone View' sidebar with a '+' button. The central 'Add Zone' dialog is open, showing the following configuration options:

- Zone: Muster Zone 1
- Include Visitors:
- Companies: All, Selectable
- Emergency Responders: Ignore, Selectable

Company	Emergency Responder
<input type="checkbox"/> AMERICAN DYNAMICS	<input checked="" type="checkbox"/> Fire Marshall
<input checked="" type="checkbox"/> CEM SYSTEMS	<input checked="" type="checkbox"/> First Aid
<input type="checkbox"/> JOHNSON CONTROLS	<input type="checkbox"/> First Responder

An 'OK' button is located at the bottom right of the dialog.

When configuring a TAB on Zone Monitor, the operator can now select which types of Emergency Responder are to be monitored
E.g. Configure a TAB to list which First Aiders on site

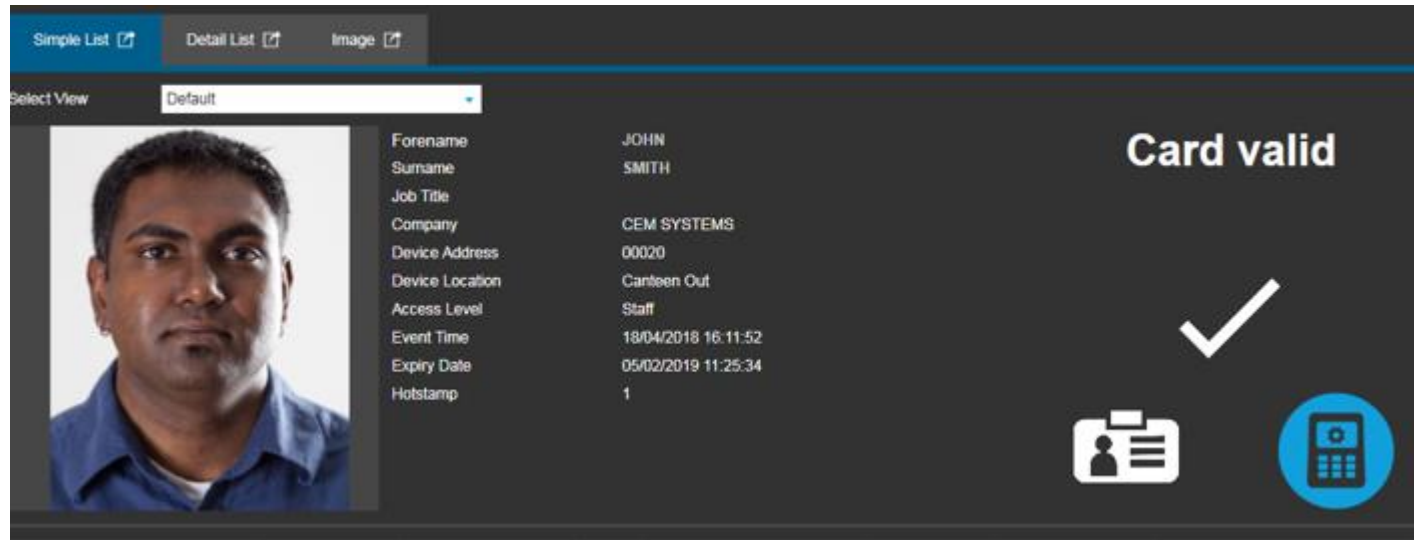
+ number of TABs supported has been increased

+ new TAB pop out feature makes it possible to pop the Zone Monitor TABs onto different monitors



■ RTD improvements (web & client) – changes driven by customer feed-back

- Make Outcome description larger
- Display ✓ or ✗ icon to distinguish between valid and invalid outcomes
- Allow for 2 custom icons e.g. display a vehicle icon for those card holders who are drivers or a suitcase for those who have Baggage access
- Make it possible to pop the 3 displays out onto different displays






Rolling Transaction Display

DEVICE REPORT REMAPPER VIEW ONESHOT EXTENDED OPENING CONFIGURATION Help

Pause Monitoring




Simple List Detail List Image

Select View: Default



Forename	JOHN
Surname	SMITH
Job Title	
Company	CEM SYSTEMS
Device Address	00020
Device Location	Canteen Out
Access Level	Staff
Event Time	18/04/2018 16:11:52
Expiry Date	05/02/2019 11:25:34
Hotstamp	1

Card valid



Surname/Registration Number	Forename/Make	Company	Device	Device Location	Outcome	Event Time	Job/Model
SMITH	JOHN	CEM SYSTEMS	00020	Canteen Out	Card valid	18/04/2018 16:11:52	
BLACK	SARAH	JOHNSON CONTROLS	00061	Managers Office 1 In	Wrong zone	18/04/2018 16:11:34	
BLACK	SARAH	JOHNSON CONTROLS	00061	Managers Office 1 In	Wrong zone	18/04/2018 16:10:38	
SMITH	JOHN	CEM SYSTEMS	00021	Canteen In	Card valid	18/04/2018 16:10:21	
SMITH	JOHN	CEM SYSTEMS	00001	Main Entrance In	Card valid	18/04/2018 16:10:14	

AC2000 User : cem Last Login : 18/04/2018 16:01















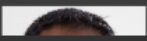
Rolling Transaction Display

DEVICE REPORT REMAPPER VIEW ONESHOT EXTENDED OPENING CONFIGURATION Help

Pause Monitoring

Simple List Detail List Image

Details

	Forename: JOHN Surname: SMITH Company: CEM SYSTEMS Device Address: 00020 Device Location: Canteen Out Access Level: Staff Event Time: 18/04/2018 16:11:52	Job Title: Hotstamp: 1 Expiry Date: 05/02/2019 11:25:34	Card valid   
	Forename: SARAH Surname: BLACK Company: JOHNSON CONTROLS Device Address: 00061 Device Location: Managers Office 1 In Access Level: Managers Event Time: 18/04/2018 16:11:34	Job Title: Hotstamp: 3 Expiry Date: 05/02/2019 11:26:34	Wrong zone   
	Forename: SARAH Surname: BLACK Company: JOHNSON CONTROLS Device Address: 00061 Device Location: Managers Office 1 In Access Level: Managers Event Time: 18/04/2018 16:10:38	Job Title: Hotstamp: 3 Expiry Date: 05/02/2019 11:26:34	Wrong zone   
	Forename: JOHN		Card valid

AC2000 User : cem Last Login : 18/04/2018 16:01



Rolling Transaction Display


DEVICE REPORT REMAPPER VIEW ONESHOT EXTENDED OPENING CONFIGURATION Help

Pause Monitoring




Simple List Detail List **Image**

Forename
SARAH
Surname
BLACK

Device Address
00061
Device Location
Managers Office 1 In
Transaction Time
18/04/2018 16:11:34



Wrong zone



AC2000 User : cem Last Login : 18/04/2018 16:01



■ SimonsVoss SmartIntego wireless (on-line) locks

- Significant changes were made to the RTC software & Devices app to support the Simons Voss wireless locks
- SV locks are included in access levels like AC2000 readers
- Likewise their transactions and alarms are uploaded to AC2000
- It is possible to send a Oneshot or Broadcast to the wireless locks
- The SV Node IO device (3 inputs / 1 output) is also supported
- A basic whitelist is built up within the locks
- Office mode option – hold card to lock for >2 seconds, door remains open for either a timeout period or until the mode is cancelled.

- Demo available

Simons Voss
technologies





- The last year has seen a significant increase in the use of the AC2000 API
- As we work with integrators, new functions and views are regularly added to meet their needs
 - E.g. functions to add and remove extra access to/from groups of card holders in 1 go
 - Or to Lockdown or Release a Lockdown Zone
- Most important change - at V10.1 we introduced the **Restful API** so that the integrator can now use a secure web connection over https to access the API procedures and views.
- The results will be returned as XML or JSON.
- For API integrators, a new Web page to generate Transactions was added to complement the existing Alarm Generator web page
- Note: in a future release (yet to be confirmed) – we will retire the ODBC version so we recommend that all new integrations are written using the Restful API





■ Enhanced Snapshell integration (OCR)

- Previously it was possible to scan personal details and image from a Passport or Driving Licence within the Visitors module.
- This functionality has now been added to Client Personnel as well
- Also Instead of hard-coding the fields processed, the user can now select the fields from a Passport or Driving License and map them to user selected fields on both Personnel and Visitors.



■ Re-scale Option for low res laptops & hi-res monitors

- With advent of 4K monitors and need to run AC2000 on laptops, it is now possible to re-scale apps to run on v high or low resolution monitors



■ Smart Card Enhancement

- It is now also possible to validate/read CSN or PID from a pre-programmed AES card via an Omnikey coupler



■ **Swipe to remove extra access**

- For years it has been possible to configure Swipe Invoked Extra Access where a swipe on a Trigger reader causes an access level to be added to a card holder for a specified period of time
- It is now possible to specify that a reader triggers the removal of Extra Access e.g. a swipe on an Exit reader.

■ **emerald T&A check** – option to configure emerald to display the date and time of your last swipe so users can check their T&A swipes have registered correctly

■ **Enterprise enhancement – allow Batch Export/UN-Export of card holders**

- User can query e.g. by Company or Department to find a group of card holders and then either Export them to or UN-Export them from another site in one operation





- **For Data Control purposes** - The System Administrator can specify the number of days that the history files (alarms, transactions and all audits) are stored on the hard disk.
Default is currently 5 years
- **Batch Remove Extra Access** – now possible to remove single or multiple access levels.
- **Option to view Approved Vehicles** from Personnel
 - Window shows list of vehicles for which this member of personnel record is an approved driver
- **Add Visitor Escort functionality to Web Visitors** (previously supported in Client Visitors)
- **New Validation Option on Personnel** – type in the card number in decimal or hexadecimal

Validate

Base Decimal Hexadecimal

Card Number

Hotstamp

Validate

Cancel

V10.1 User Experience Improvements



- Constantly striving to improve use-ability of apps by taking feed-back from Customers, Training Team, Support etc.
- In V10.1
 - the **Getting Started Wizard** was improved in light of feedback from the Trainers.
 - the **Utilities & Guard tours** apps were re-worked to provide an improved UX
 - a **Multi-select feature** was added to multiple apps where the user can select multiple items within a check box list by using SHIFT multiple select or CTRL multiple select
 - **Reports – dates** entered by user are preserved in the next report
- AC2000 Web - To make everyone's life easier, **Licence codes** can now be handled as 1 long string not 4 parts

AC2000 LICENSING

Add Licence

New Licence Code *



- Major package updates to **cemlinc** – the AC2000 OS
- **Fluid forms & code toughening** applied to 95% of Web pages at V10.1
- **New password rules** (Configured parameters to enable/disable options have been removed)
 - Password must be at least 8 chars long and must contain 3 of the 4 following :–
 - At least 1 upper case,
 - 1 lower case,
 - 1 number and
 - 1 special character e.g. `!#$%&()* ,./:;<=>?@[^_`{|}~`
- We have also added checks for **commonly chosen passwords**
- **No default passwords** – cem, root passwords must be set during installation of the CDC
- Several other significant security changes ‘under the hood’





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AC2000 Software Update
Version 10.2
Due for release July 2019



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Due for release July 2019

Key features

- AC2000 Time Hub (Web & Client)
- New Pass Design – QR codes
- Advanced Room Booking (with access control)
- Enhanced Web Personnel
- Support for the DCM400
- Various Other changes



Enhanced User Interface

- All on 1 screen

1. **Dragable controls,**
2. **Badge layout,**
3. **Pass control properties**

- Improved grid for design, layout

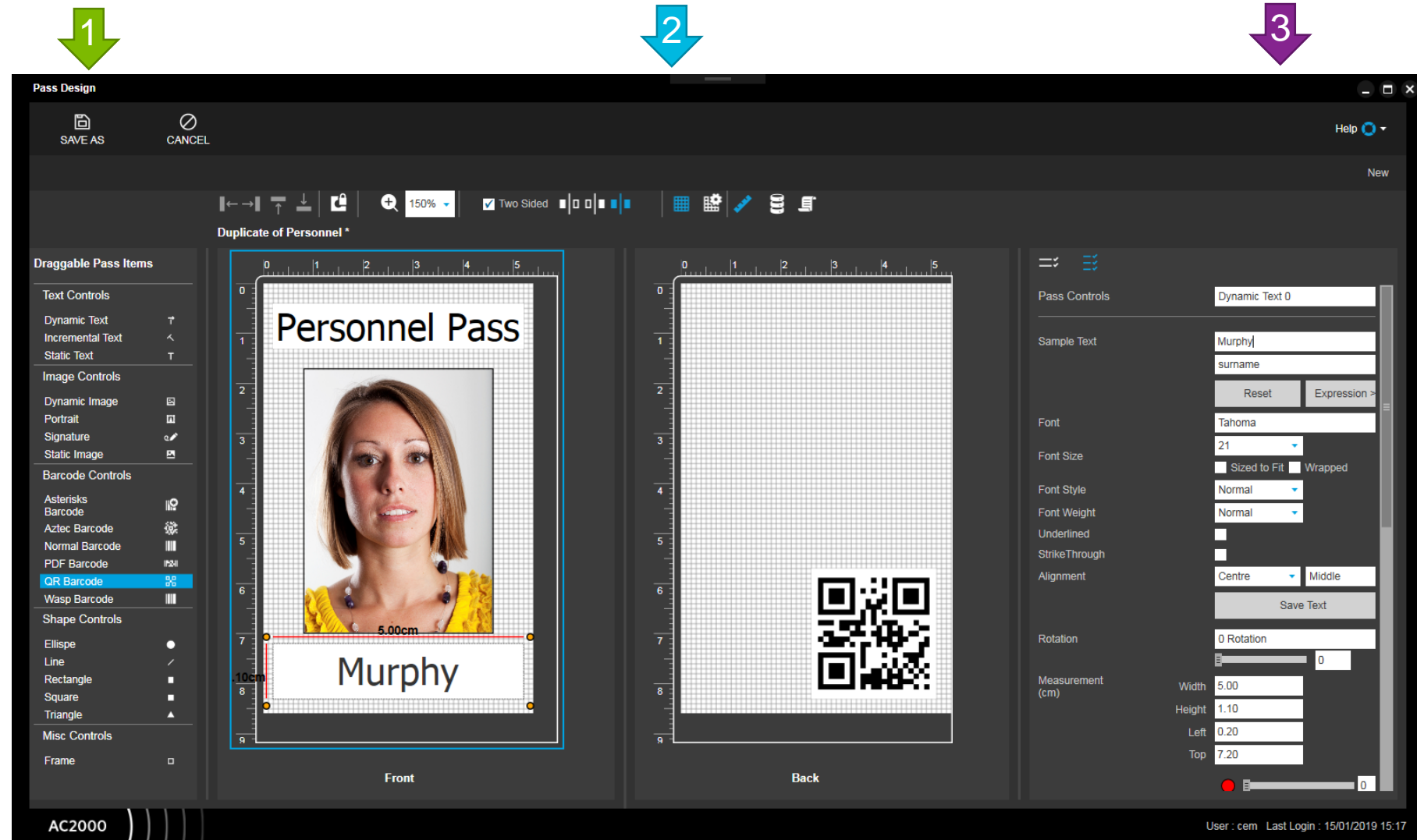
- Improved SQLbuilder

- Visual or Direct SQL view

- Expression builder

e.g. 1 control
instead of 3 for

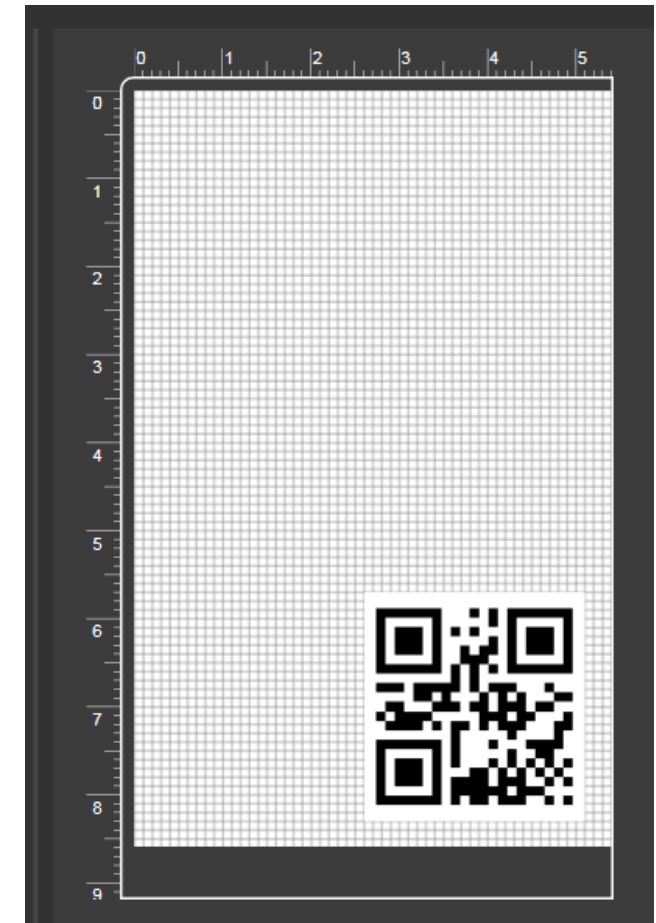
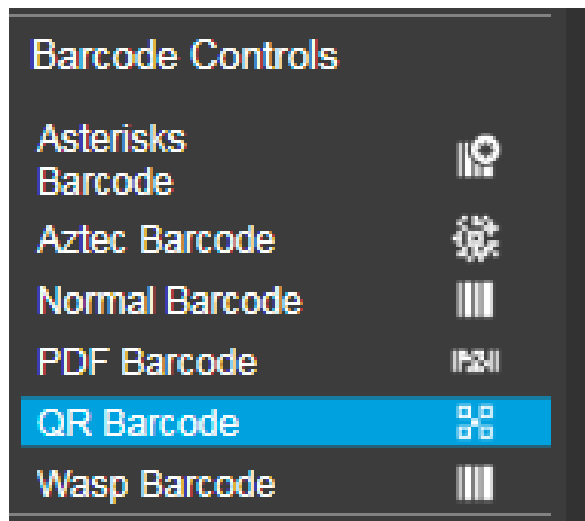
Miss Jane Smith



V10.2 Pass Design – Barcodes/QR Support

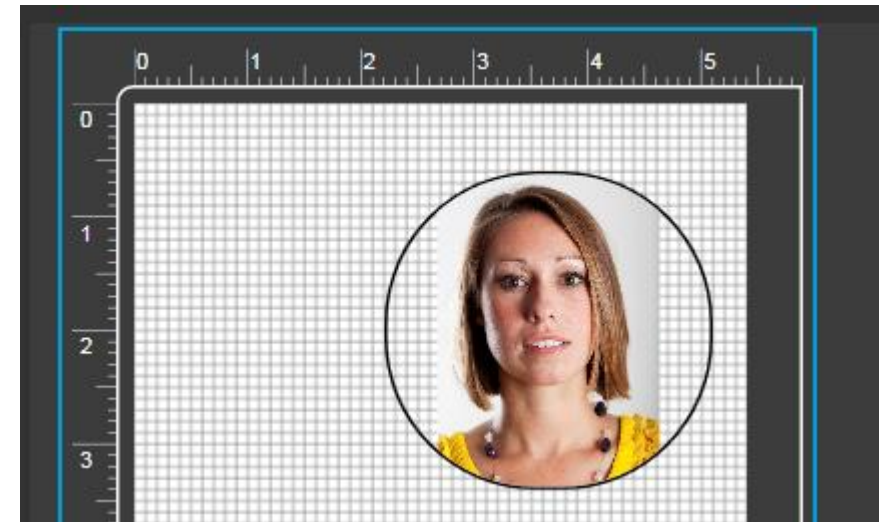


- Pass Design now supports 5 different types of barcodes plus QR codes
 - It is now possible to print passes with these barcodes & QR codes via
 - Client Personnel, Visitors & Vehicles
 - Web Personnel & Visitors
- Note – there are limitations on which barcodes different Browsers support*
- Option - Print pass with QR/Barcode to PDF file then email to visitor who can use the QR/Barcode or barcode on their phone to gain access



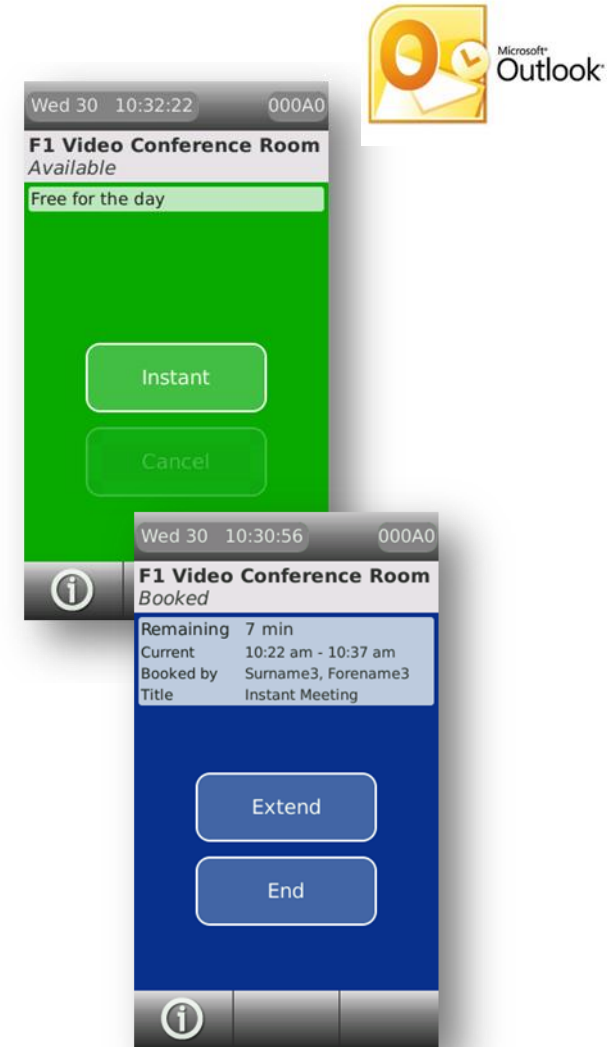


- Master Pass/Child Pass relationship
 - Create a master then derive child passes from it
 - Updates to master automatically applied to children
- New incremental text control e.g. when printing 100 visitor passes from Visitor 1 to Visitor 100
- Improved shape controls – option for curved edges, circles etc.
- Pass design data now stored in both directory of flat files and the database
- New Pass Export / Import feature – when pass files are to be used on another related AC2000 systems
- Auto-conversion feature from current pss file format to new format first time a pass file is loaded in the new app



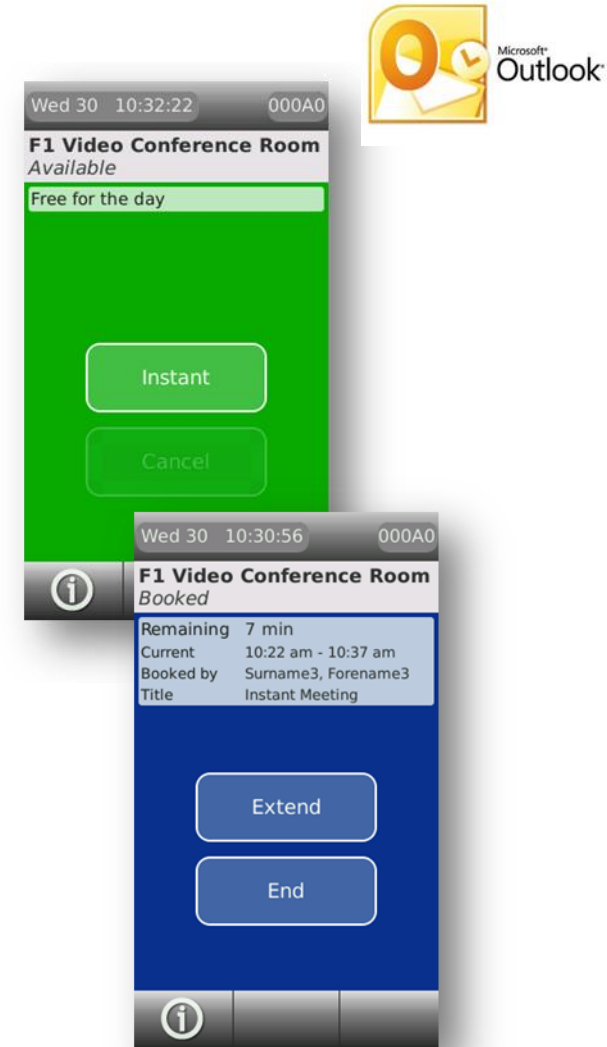


- Existing Room Booking options remain but a new Advanced Room Booking feature which includes access control is now available.
- Access Control will be enabled on the emeralds controlling meeting rooms
- Each Meeting room will have an access level, time-zone and grace period associated with it.
- Initially attendees will not have access to the meeting room
- **When booked via Outlook**, access to meeting rooms will be assigned as Temporary Extra Access for the duration of the meeting (+ grace period at start and end) to the invitees.





- Email address of meeting invitees will be used to link to their Personnel record on AC2000 so that the appropriate extra Temporary Extra Access can be assigned. Essential that email address on personnel is correct. Access is added when a Personnel record with same email address is found and the invite is accepted
- Supports email groups i.e. distribution lists
- **When booking the room at the door, it will NOT be possible to invite attendees or give them access to the room**
- Note: As is currently the case, it will only be possible to make an Instant Booking if the card holder already has access to the meeting room emerald.





The screenshot displays the 'WEB PERSONNEL' interface for user 'AC2000'. It is divided into several sections:

- Personal Details:** Includes fields for Surname (OLIVER), Forenames (GEORGE), Address (1) (5757 N GREEN BAY AVE), Address (2) (MILWAUKEE), Postcode (53201), Date of Birth, Gender (Male), Email (GEORGE.OLIVER@JCI.COM), PIN (7611), Payroll Number, and Contact Number.
- Employment Details:** A table listing employment records:

Company	Department	Job Title
JOHNSON CONTROLS	JCI EXECUTIVE TEAM	JCI CEO
TYCO INTERNATIONAL	TYCO EXECUTIVE TEAM	JCI CEO
- Card Details:** Shows 'Card pending validation', 'Card Format' (Generate Card Num), 'Company' (JOHNSON CONTROLS), 'Card Status' (none), 'Access Level' (00000), and 'Timezone' (ALL THE TIME).
- System Information:** Includes Home Serial (164), Serial (164), Partition (Default Partition), Added By (cem), Creation Date (31/01/2019 15:21:10), Park Exemption (Not Exempt), Exempt Until, and checkboxes for Special Usage, Referred, Permit, Traced, Bio Captured, Limited Usage, Extra Access, and Parked.

A photo of George Oliver is shown with a 'Capture Date' of 31/01/2019 15:24:29. Below the photo is a signature field containing a handwritten signature.

At the bottom, there is a navigation bar with buttons for ADD PERSONNEL, SEARCH, PRINT CARD, VALIDATE, EXTRA ACCESS, and BATCH.

Web Personnel at v10.1 supported Find, Edit, Assign Extra Access, On-line validation and User defined fields.

At V10.2 the functionality is significantly improved as the following functions have been added:-

1. **Add Personnel** details
2. **Add ID Card** details
3. **Print ID Card**
4. **Batch Add/Remove Extra Access**
5. **Validate card** by typing in the card number or generating the card number

We will continue to add further features in future releases.



- The RTC code has been extended to support a 4 Door Controller
- Secure TLS comms are used between RTC and DCM400
- Certificates are used to prevent a 'man in the middle' attack after the controller's first connection to the RTC.
- Two-way authentication is used as both the CDC and each DCM400 have a unique self-signed certificate.

Note: it will NOT be possible to support DCM400s on earlier releases. V10.2 or later is required





- The Devices app has been updated to make addition and configuration of the DCM400 as quick and easy as possible.

Add DCM400 Controller

DCM400 Properties

Description: DCM 400

Controller: Controller 00 - RTC00 ON CDC

MAC Address

MAC Address: 00 : 30 : 46 : : :

Create Doors: 4

Device Address	Physical Address	Device Location	Configuration Mode
00F20	0	DCM 400 Door A	EDCM400 M/S
00F30	1	DCM 400 Door B Extra Desc	EDCM400 M/S
00F40	2	DCM 400 Door C	EDCM400 M/S
00F50	3	DCM 400 Door D	EDCM400 M/S



- **Fail-over alarms will now be generated by fail-over RTCs as well as CDCs**
 - Also include details of un-cancelled RTC fail-over alarms on the fail-over web page
- **Add fluid forms/enhanced data validation to**
 - Web Visitor apps, Generate Alarms, Generate Transactions, XML export, Image Export & LDAP web pages
- **Customisable reports & mask_pin (Web & Client)**
 - If mask_pin is enabled, do not include PIN in the list of fields that can be added to a custom report.
- **New validate option to type in the card number** added to Client Vehicles and Visitors plus Web Visitors

Validate

Base Decimal Hexadecimal

Card Number

Hotstamp

Validate

Cancel



- **Client Image Library** has been updated to provide **Improved image capture quality**

- **Multiple updates**

- Extra Access option - Remove multiple access levels in one operation
- Batch Add many extra access levels in one operation

- **Transaction report**

- Option to report on swipes by specifying **Visitor Only** or **Personnel Only** or **Both**

- **AckCan time threshold**

- Make it possible to clear all alarms that occurred e.g. more than 4 hours ago

- **Improvements to Referral & Trace options**

- Optimised, simpler operation

Batch Remove Extra Access

Selected records 4

<input type="checkbox"/>	Serial	Surname	Forename	Company
<input checked="" type="checkbox"/>	1	CHESNEY	MAGGI	MULTIPLE
<input type="checkbox"/>	2	SMITH	JOHN	CEM - CEM SYSTEMS
<input checked="" type="checkbox"/>	3	CUNNINGHAM	TREVOR	ACM - ACME
<input type="checkbox"/>	4	MCNICHOLL	MARC	CEM - CEM SYSTEMS
<input checked="" type="checkbox"/>	5	BROWN	JAMES	MULTIPLE
<input type="checkbox"/>	6	BROWN	JILL	CEM - CEM SYSTEMS
<input checked="" type="checkbox"/>	7	BLACK	ALICE	CEM - CEM SYSTEMS
<input type="checkbox"/>	8	GREEN	PAUL	CEM - CEM SYSTEMS
<input type="checkbox"/>	9	HUGHES	FRED	CEM - CEM SYSTEMS
<input type="checkbox"/>	10	SMITH	TOM	M I I TIPI F

Extra Access to remove

<input type="checkbox"/>	Access Level	Timezone
<input checked="" type="checkbox"/>	No access	ALL THE TIME
<input checked="" type="checkbox"/>	Perimeter Access	11
<input type="checkbox"/>	Internal Office doors	ALL THE TIME
<input checked="" type="checkbox"/>	Server Rooms	ALL THE TIME

Remove



tyco



ENGAGE
TYCO CONFERENCE 2019



Thank you



Questions?



Johnson Controls





tyco



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AC2000 Time Hub

Marc McNicholl



Johnson Controls





AC2000 Time Hub
Settings
Help

ADD
 DELETE

Browse Mode

Manage shift

Home Serial:

Surname:

Forename:

Payroll Number:

Company: (none)

Job Title:

Department:

Name	Home Serial	Company
	4	CEM - CEM SYSTEMS

Shift details for JENNINGS, STEFAN:

Shift date: 14/07/2019

Copy from: (none)

Description: Auxiliary shift

Band start time: 01 : 00

Start time: 03 : 00

End time: 07 : 00 4 Hours 0 minutes

Band end time: 11 : 00

Rest period (mins): 30

Expected duration: 3 Hours 30 minutes

Grace period (mins): 0

Zone: Main building

July 2019

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
24	25	26	27	28	29	30
01	02	03	04	05	06	07
08	09	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	01	02	03	04

Description	Band time	Shift time
Auxiliary shift		
Morning Shift	01:00 - 11:00	03:00 - 07:00
Day Shift	05:00 - 20:00	09:00 - 17:00
Night Shift	16:00 - 10:00	20:00 - 06:00

AC2000
User : cem Last Login : 29/04/2019 11:32



SHIFT WORK



Can CEM AC000 Handle Shift working?



Static shift

- Day Shift
- Morning Shift
- Night Shift**

Details

Description: Night Shift

Band start time: 16 : 00

Start time: 20 : 00

End time: 06 : 00

Band end time: 10 : 00

Rest period (mins): 90

Expected duration: 8 Hours 30 minutes

Grace period (mins): 5

Default zone: Factory floor

Colour: MediumVioletRed

10 Hours 0 minutes **Overnight**

Day 1

Day 2

Assigned to

Working week	Rolling pattern
Monday-Friday Week	Day Night Rotation
Night Shift Week	Rota A



The screenshot displays the Engage Shift Management interface. On the left, a sidebar lists various working weeks, with "_Working Week" selected. The main area is divided into two sections: "Details" and a calendar for "January 2019".

Details Section:

- Description:
- Holiday:
- Day, Shift, and Zone table:

Day	Shift	Zone
Sunday	Off day	(none)
Monday	_Day Shift	Building 1
Tuesday	_Day Shift	Building 1
Wednesday	_Night Shift	Building 1
Thursday	_Night Shift	Building 1
Friday	Off day	(none)
Saturday	Off day	(none)

Calendar Section (January 2019):

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
31	01	02	03	04	05	06
07	08	09	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	01	02	03
04	05	06	07	08	09	10

Legend:

Description	Band time	Time
_Day Shift	06:00 - 19:00	08:00 - 16:30
_Night Shift	21:00 - 08:00	22:00 - 06:00

AC2000

User: cem Last Login: 16/01/2019 08:30

VC3000

User: cem Last Login: 16/01/2019 08:30

Rolling Shifts



Details

Description: Day Night Rotation

Holiday group: Statutory Holidays

Shift	Zone	Repeat
Day Shift	Factory floor	5
Off day	(none)	2
Night Shift	Factory floor	4
Off day	(none)	2

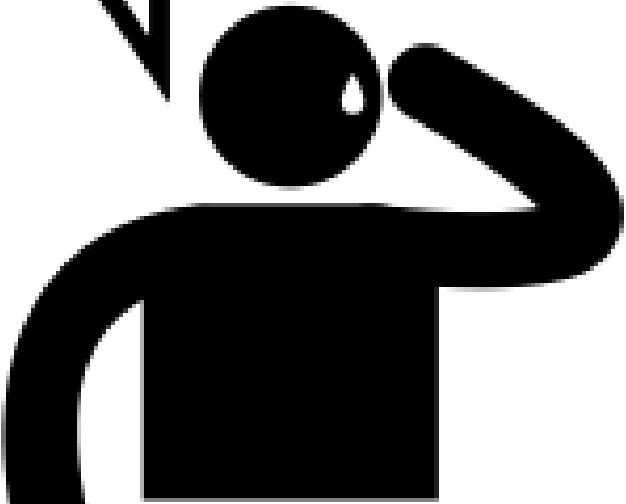
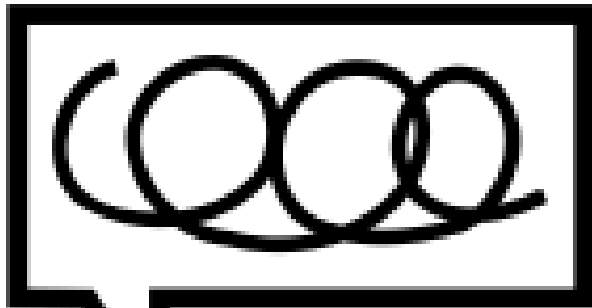
April 2019

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
25	26	27	28	29	30	31
01	02	03	04	05	06	07
08	09	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	01	02	03	04	05

Description	Band time	Shift time
Day Shift	05:00 - 20:00	09:00 - 17:00
Night Shift	16:00 - 10:00	20:00 - 06:00



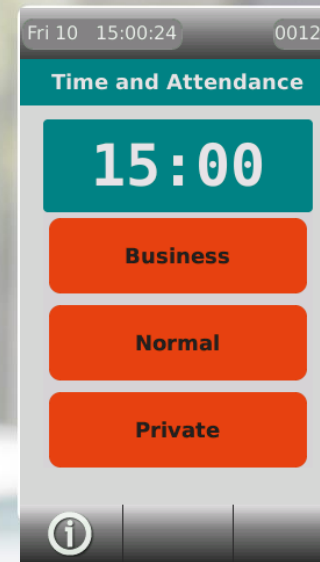
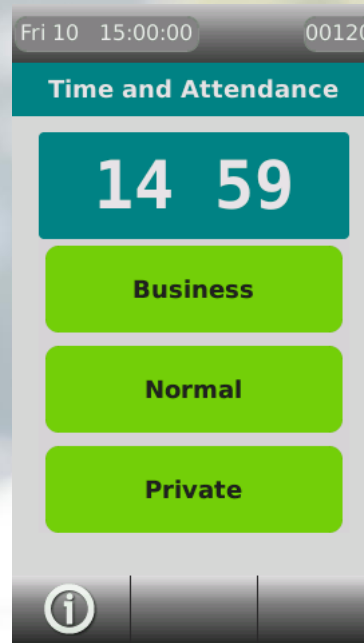
Forgotten Card





Out of office

- No requirement for 3rd party terminals
- Guarantee of compatibility with access control card
- No additional database for Time and attendance
- Simplified architecture
- No duplicated administration
- Dedicated Time & Attendance reporting software within the AC2000 software
- Single User Interface for Access Control and T&A



AC2000 Time Hub Reports



Home Serial	Name	Expected Total Hours	Total Hours	Total OT
2	CHENG, JOE	14 hours 0 minutes	14 hours 25 minutes	0 hours 30 minutes
4	JENNINGS, STEFAN	14 hours 0 minutes	16 hours 13 minutes	2 hours 13 minutes
11	KARIM, AZHAR	14 hours 0 minutes	14 hours 0 minutes	
5	MAHESH, JULIE	14 hours 0 minutes	14 hours 0 minutes	
1	MILLIGAN, AARON	14 hours 0 minutes	13 hours 30 minutes	
6	OLIVER, SHARON	7 hours 0 minutes	6 hours 54 minutes	
7	RICHARDS, JOEY	14 hours 0 minutes	6 hours 58 minutes	
8	SINGH, RAMESH	14 hours 0 minutes		
9	STEVENS, SARAH	14 hours 0 minutes	14 hours 0 minutes	
10	SU, HUA			



Summary

Start date: 01/04/2019
 End date: 02/04/2019
 Selected Cardholders: All Cardholders
 Selected option: All

Time and Attendance: Results 1 - 9 of 10

Home Serial	Name	Expected Total Hours	Total Hours	Total OT													
2	CHENG, JOE	14 hours 0 minutes	14 hours 25 minutes	0 hours 30 minutes													
Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
01/04/2019	Main building	09:00 - 17:00	07:00	09:05:00	17:00:00	06:55	01:00			✓							✓
02/04/2019	Main building	09:00 - 17:00	07:00	08:30:00	17:00:00	07:30	01:00	00:30		✓							
4	JENNINGS, STEFAN	14 hours 0 minutes	16 hours 13 minutes	2 hours 13 minutes													
Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
01/04/2019	Main building	09:00 - 17:00	07:00	10:01:00	19:16:00	08:15	01:00	01:15		✓						✓	
02/04/2019	Main building	09:00 - 17:00	07:00	08:50:00	17:48:00	07:58	01:00	00:58		✓							
11	KARIM, AZHAR	14 hours 0 minutes	14 hours 0 minutes														
Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
01/04/2019	Main building	09:00 - 17:00	07:00	09:00:00	17:00:00	07:00	01:00			✓							
02/04/2019	Main building	09:00 - 17:00	07:00	09:40:00	17:10:00	06:30	01:00			✓							
5	MAHESH, JULIE	14 hours 0 minutes	14 hours 0 minutes														
Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
01/04/2019	Factory floor	09:00 - 17:00	07:00	09:00:00	17:00:00	07:00	01:00			✓							
02/04/2019	Factory floor	09:00 - 17:00	07:00	09:40:00	17:10:00	06:30	01:00			✓							
1	MILLIGAN, AARON	14 hours 0 minutes	13 hours 30 minutes														
Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
01/04/2019	Factory floor	09:00 - 17:00	07:00	09:00:00	17:00:00	07:00	01:00			✓							
02/04/2019	Factory floor	09:00 - 17:00	07:00	09:40:00	17:10:00	06:30	01:00			✓							
6	OLIVER, SHARON	7 hours 0 minutes	6 hours 54 minutes														
Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
01/04/2019	Main building	09:00 - 17:00	07:00	09:00:00	17:00:00	07:00	01:00			✓							
02/04/2019	Main building	09:00 - 17:00	07:00	09:00:00	17:00:00	07:00	01:00			✓							
7	RICHARDS, JOEY	14 hours 0 minutes	6 hours 58 minutes														
Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
01/04/2019	Main building	09:00 - 17:00	07:00	09:00:00	16:58:00	06:58	01:00			✓						✓	✓
02/04/2019	Main building	09:00 - 17:00	07:00	09:00:00	17:00:00	07:00	01:00			✓				✓		✓	✓
8	SINGH, RAMESH	14 hours 0 minutes															
Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
01/04/2019	Main building	09:00 - 17:00	07:00				01:00									✓	✓
02/04/2019	Main building	09:00 - 17:00	07:00				01:00									✓	✓
9	STEVENS, SARAH	14 hours 0 minutes	14 hours 0 minutes														
Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
01/04/2019	Main building	09:00 - 17:00	07:00				01:00									✓	✓
02/04/2019	Main building	09:00 - 17:00	07:00				01:00									✓	✓

Key

AC2000 Web Time Hub Reports

AC2000 TIME AND ATTENDANCE SA-10-2-7717

Manage Shift: Search

Home Serial: Forenames: Surname: Payroll Number: Department: Job Title: Company: CEM SYSTEMS

SEARCH CLEAR

SEARCH RESULTS

CHENG, JOE
GAMBLE, SARA
JENNINGS, STEFAN
KARIM, AZHAR
MAHESH, JULIE
MILLIGAN, AARON
OLIVER, SHARON
RICHARDS, JOEY
SINGH, RAMESH
STEVENS, SARAH
SU, HUA

Home Serial: 4 Forenames: STEFAN Surname: JENNINGS Payroll Number: Department: DESIGN CENTRE Job Title: DESIGNER

Shift Date: 25/04/2019

Copy From: [None]

Description: [None]

Band Start Time (mins): [None]

Start Time (mins): [None]

End Time (mins): [None]

Band End Time (mins): [None]

Rest Period (mins): 0

Grace Period (mins): [None]

Zone: [Please Select]

July 2019

AC2000 TIME AND ATTENDANCE SA-10-2-7717

Working Week

Description: [None]

Holiday Group: [None]

Day Shift Week

Monday-Friday Week

Night Shift Week

Day: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday

Shift: Day Shift, Morning Shift, Night Shift, CF day

Zone: Main building, Factory floor

April 2019

Static Shift

Description	Band Time	Shift Time
Day Shift	05:00 - 20:00	09:00 - 17:00
Morning Shift	01:00 - 11:00	03:00 - 07:00
Night Shift	16:00 - 10:00	20:00 - 06:00

AC2000 TIME AND ATTENDANCE SA-10-2-7717

Home Serial	Name	Expected Total Hours	Total Hours	Total OT														
2	CHENG, JOE	14 hours 0 minutes	14 hours 25 minutes	0 hours 30 minutes														
4	JENNINGS, STEFAN	14 hours 0 minutes	16 hours 13 minutes	2 hours 13 minutes														
	Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
	01/04/2019	Main building	09:00 - 17:00	07:00	10:01:00	19:16:00	08:15	01:00	01:15									
	02/04/2019	Main building	09:00 - 17:00	07:00	08:50:00	17:48:00	07:58	01:00	00:58									
11	KARIM, AZHAR	14 hours 0 minutes	14 hours 0 minutes															
5	MAHESH, JULIE	14 hours 0 minutes	14 hours 0 minutes															
1	MILLIGAN, AARON	14 hours 0 minutes	13 hours 30 minutes															
	Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
	01/04/2019	Factory floor	09:00 - 17:00	07:00	09:00:00	17:00:00	07:00	01:00										
	02/04/2019	Factory floor	09:00 - 17:00	07:00	09:40:00	17:10:00	06:30	01:00										
6	OLIVER, SHARON	7 hours 0 minutes	6 hours 54 minutes															
7	RICHARDS, JOEY	14 hours 0 minutes	6 hours 58 minutes															
8	SINGH, RAMESH	14 hours 0 minutes																
9	STEVENS, SARAH	14 hours 0 minutes	14 hours 0 minutes															
	Shift Date	Zone	Shift Time	Expected Duration	First In	Last Out	Duration	Rest	OT	OOO	FC	H	MI	MO	AB	LS	EF	IH
	01/04/2019	Main building	09:00 - 17:00	07:00	07:00	07:00	07:00	01:00		Annual Leave								
	02/04/2019	Main building	09:00 - 17:00	07:00	07:00	07:00	07:00	01:00		Annual Leave								
10	SU, HUA																	

BACK EMAIL EXPORT PRINT NEW REPORT





- It ensures smooth and efficient operation
- It helps to manage employee attendance issues effectively
- Easy and efficient shift management, especially for businesses that run 24/7
- Effectively managing overtime hours
- Maximise your existing security infrastructure to go beyond just access





Web Time & Attendance or Client Time & Attendance?

064

Web



Client



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Thank You



Questions?



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AC2000 Security Hub

Richard Lindsay



**Johnson
Controls**



AC2000 Security Hub Update

The interface displays a 'Second Floor' floor plan with several red and blue circular markers indicating alarm locations. Below the floor plan is an 'Alarms (62)' table with the following columns: Ref number, Alarm type, Device description, Device address, Priority, Alarm time, State, Video, and Owner.

Ref number	Alarm type	Device description	Device address	Priority	Alarm time	State	Video	Owner
9923	Video Loss	VideoEdge port 19	FD130	0	06/07/2016 11:13:17	Unacknowledged		
9922	Lost/Stolen card	Main Entrance 04	00000	600	06/07/2016 10:58:09	Unacknowledged	✓	
9920	Video Loss	VideoEdge port 7	FD070	0	06/07/2016 10:59:36	Unacknowledged		
9919	Video Loss	VideoEdge port 7	FD070	0	06/07/2016 10:59:09	Unacknowledged		
9918	Lost/Stolen card	Main Entrance 04	00000	600	06/07/2016 10:54:37	Unacknowledged	✓	admin
9916	Lost/Stolen card	Main Entrance 04	00000	600	06/07/2016 10:52:53	Unacknowledged	✓	admin
9914	Lost/Stolen card	Main Entrance 04	00000	600	06/07/2016 10:42:06	Unacknowledged	✓	admin

Below the table are two camera feeds: 'MonitorPanel 10, VideoEdge part 13' and 'MonitorPanel 6, VideoEdge part 13'. The bottom right of the interface features playback controls and a 'Request Details' section for a 'Lost/Stolen card' alarm at 'Main Entrance 04'.

This section shows three smaller monitors. The left monitor displays 'Alarm processing' for a 'Lost/Stolen card' alarm, including a list of 'Device address' and 'Alarm status'. The middle monitor shows a 'Request Details' window for the same alarm. The right monitor displays a world map with a red location pin over Europe.





Zone Monitoring

- Integrated Zone Monitoring now available within Security Hub
- Zones can be placed onto the Security Hub graphical Maps for a live instant count of each configured zone
- Monitor how many people are in each specific zone or on a building by building basis



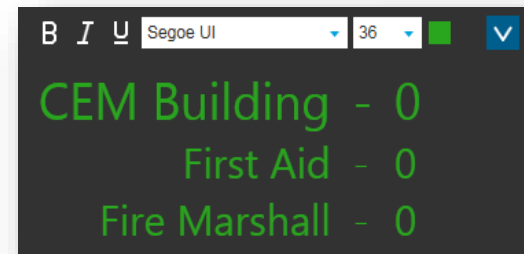
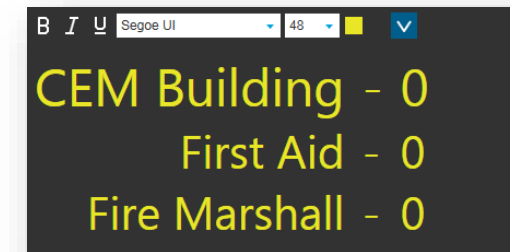
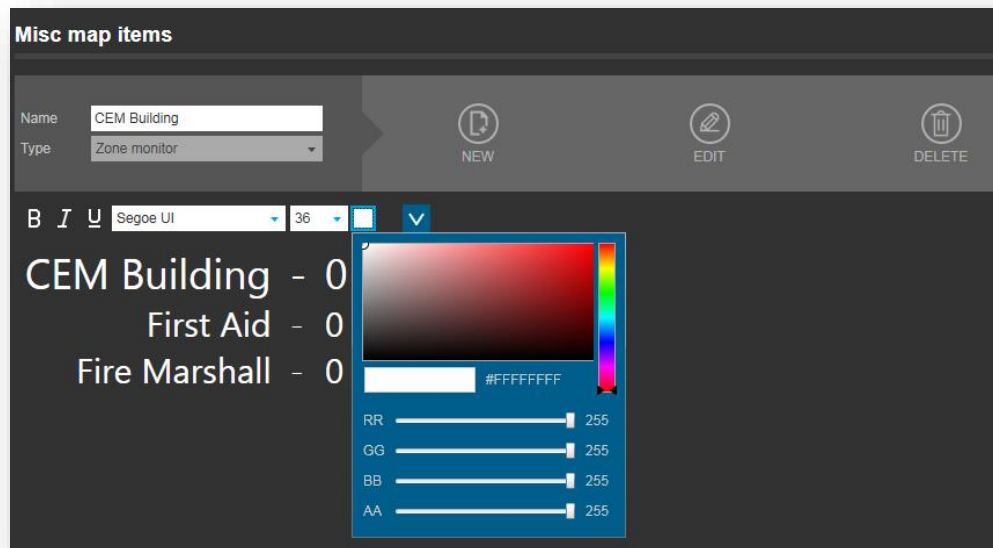
First Responders

- Ability to see where and how many emergency responders on site
- Configuration of Zone Monitor allows which types of Emergency Responders are to be monitored per independent zone



Zone Monitoring – Customisation

- Highly Configurable Per Zone
- Customised Text, Text Size, Display Colours can be defined per Zone
- Allows operators to easily read the zone information, no matter the graphical maps background colour



Security Hub – Zone Monitoring





First Responders

- Mark Individuals as a user defined responder i.e Fire Marshall, First Aider
- Allows operators to easily instantly confirm how many First responders are in each configured zone

TYCO BUILDING AIRPORT ROAD BELFAST	-	151
Fire Marshall	-	9
First Aid	-	7
PEEP (Personal Emergency Evac)	-	2
GROUND FLOOR		



Total Fire Marshalls



Total First Aiders



Total Emergency Evac



New - Full system integration to KONE lift destination system

- Use the power of AC2000 as a single interface to floor management
- Schedule-based floor access for all personnel



... improving people flow in buildings





New - Full system integration to southwest microwave perimeter detection

- Manage your perimeter detection alarms from southwest microwave on AC2000
- Acknowledge and cancel alarms
- Alert security guards of potential breaches



*... one stop shop
security management
system*



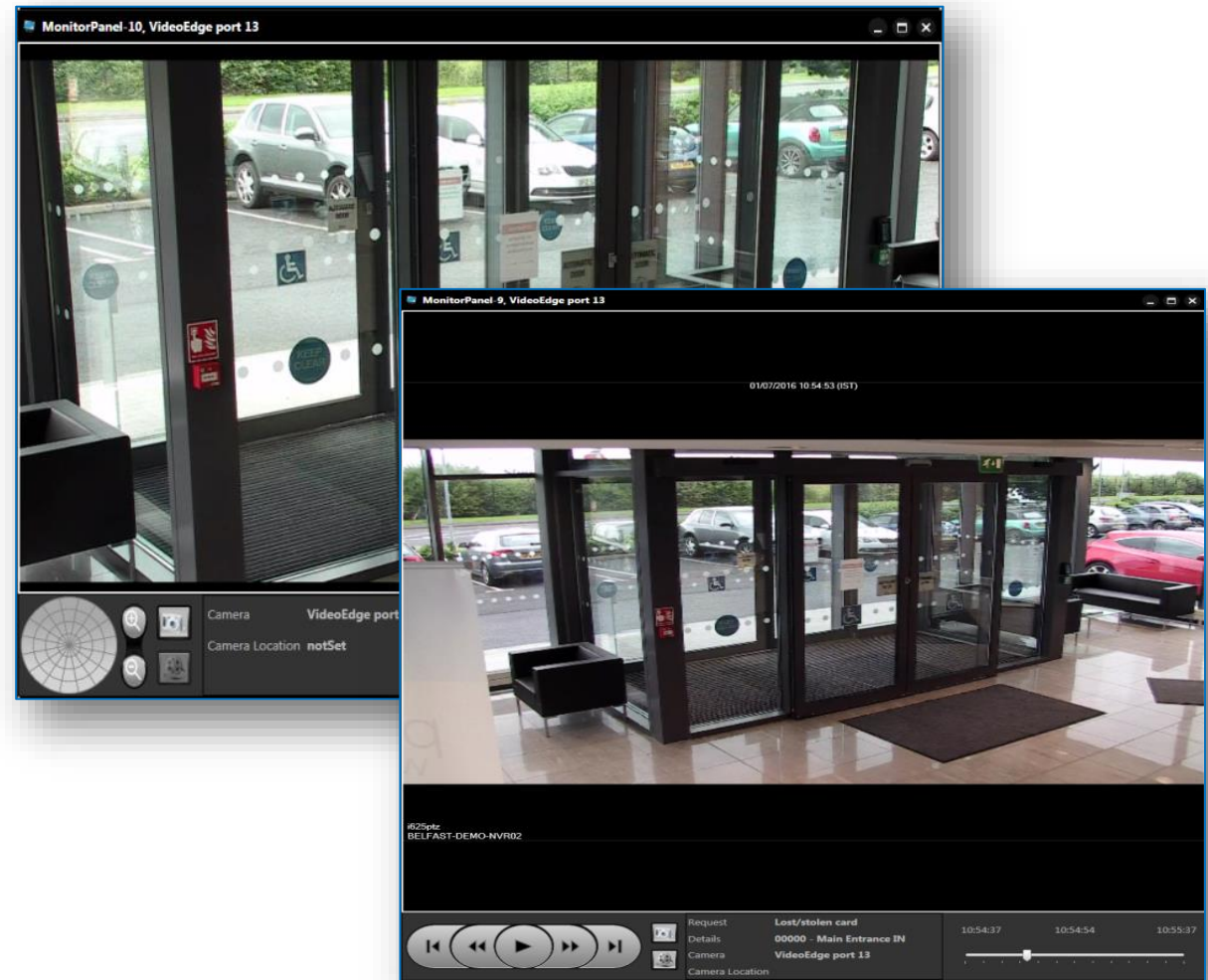


New - Full high level system integration to Samsung CCTV

- Seamlessly integrate AC2000 with Samsung Video Management System (VMS)
- Associate access control alarms or any other integrated subsystem alarms with digital video footage
- Control pan, tilt, and zoom cameras and move to specific pre-sets via AC2000



... Cause and effect with all integrated sub-systems...



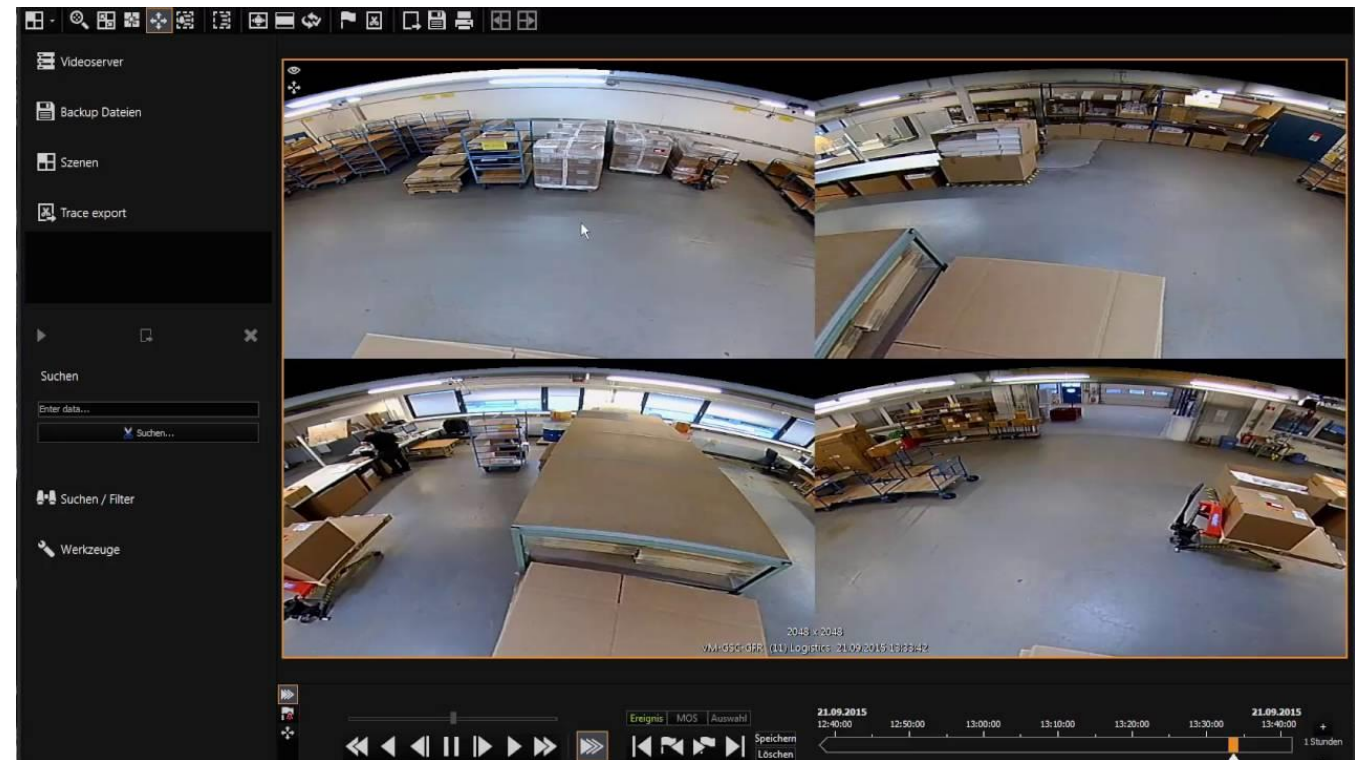


New - Full high level system integration to GEUTEBRÜCK Video

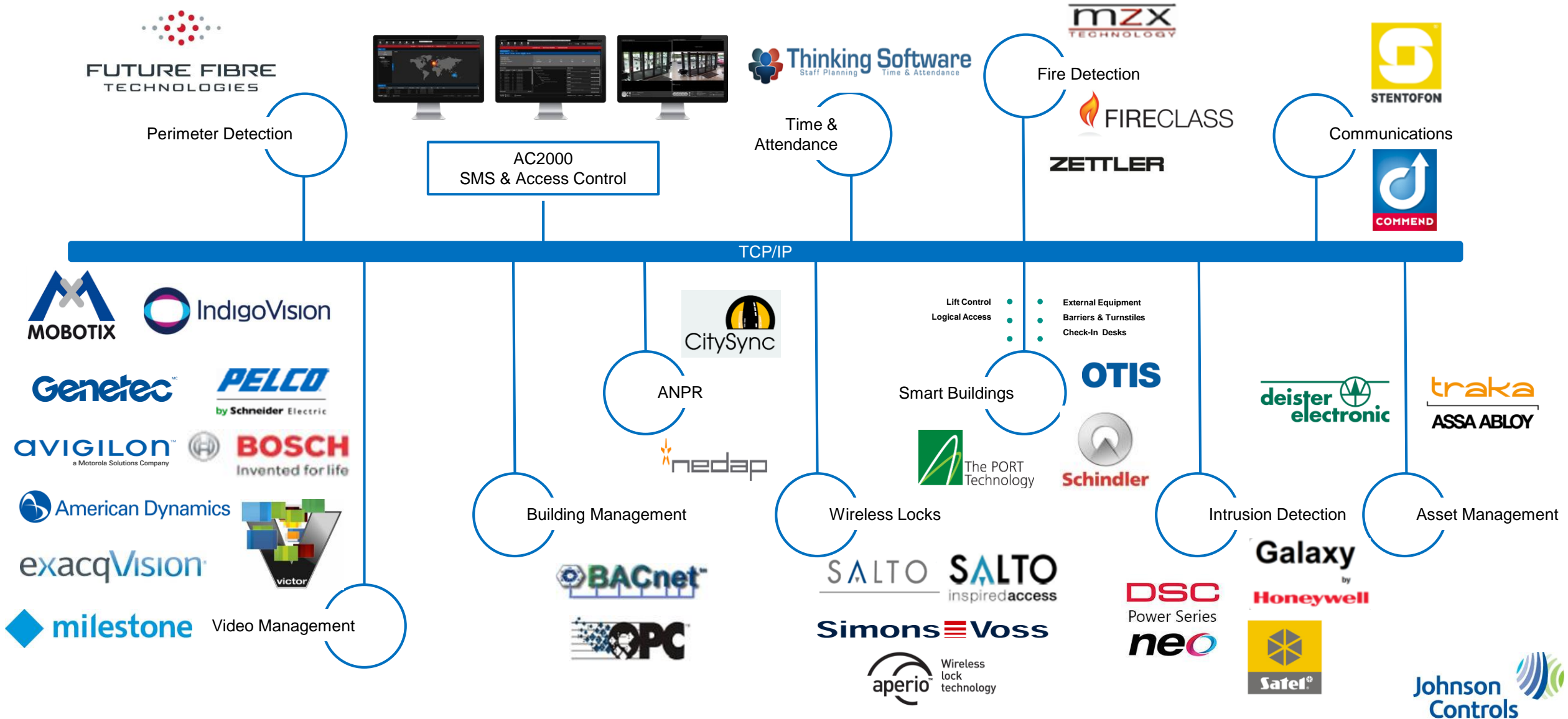
- Seamlessly integrate AC2000 with Geutebruck Video Management System (VMS)
- Associate access control alarms or any other integrated subsystem alarms with digital video footage
- Control pan, tilt, and zoom cameras and move to specific pre-sets via AC2000

GEUTEBRÜCK
Excellence in Video Security

... Cause and effect with all integrated sub-systems...



AC2000 Integrations





Simons  Voss
technologies

ASSA ABLOY

aperio™ Wireless lock technology



...Expand your physical access control with wireless locks for increased flexibility



- STid Architect® series of ergonomic and highly secure RFID readers now supported on AC2000
- Available with a standard wiegand interface for connection directly into CEM Systems Door controllers
- Available in Bluetooth Low-energy
- Fully supports secure authentication via AES static Keysets on the CEM DESfire pre-personalized smartcards



...users now have even more choice for their access control management....



- HID R series of secure RFID readers now supported on AC2000
- Available with a standard wiegand interface for connection directly into CEM Systems Door controllers or OSDPv2 interface for encrypted communications
- Available in Bluetooth Low-energy
- Fully supports secure authentication via AES static Keypsets on the CEM DESfire pre-personalized smartcards



...More choice, flexibility using third party readers



■ STid Mobile ID

- Access with Smartphone via **Bluetooth** Low Energy credentials stored on a smartphone
- Free virtual card with a UID/CSN
- Various virtual card types depending on requirements
- 5 identification modes for a unique user experience



...Enhancing your Security Management System with Peripheral Devices....



■ HID Mobile Access

- Access with Smartphone via **Bluetooth** Low Energy
- HID readers support both cards and Mobile IDs simultaneously
- Integrates directly via CEM Systems Door Controllers
- Multiple operating modes
- Tap for close range, Twist and go for longer range access



...Enhancing your Security Management System with Peripheral Devices...



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Thank You

Questions?



Johnson
Controls 





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BREAK



10:40 – 11:10



**Johnson
Controls**





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Hardware Update - DCM 400 door controller



Ian Schofield



Johnson Controls





Tyco | CEM Systems

DCM 400

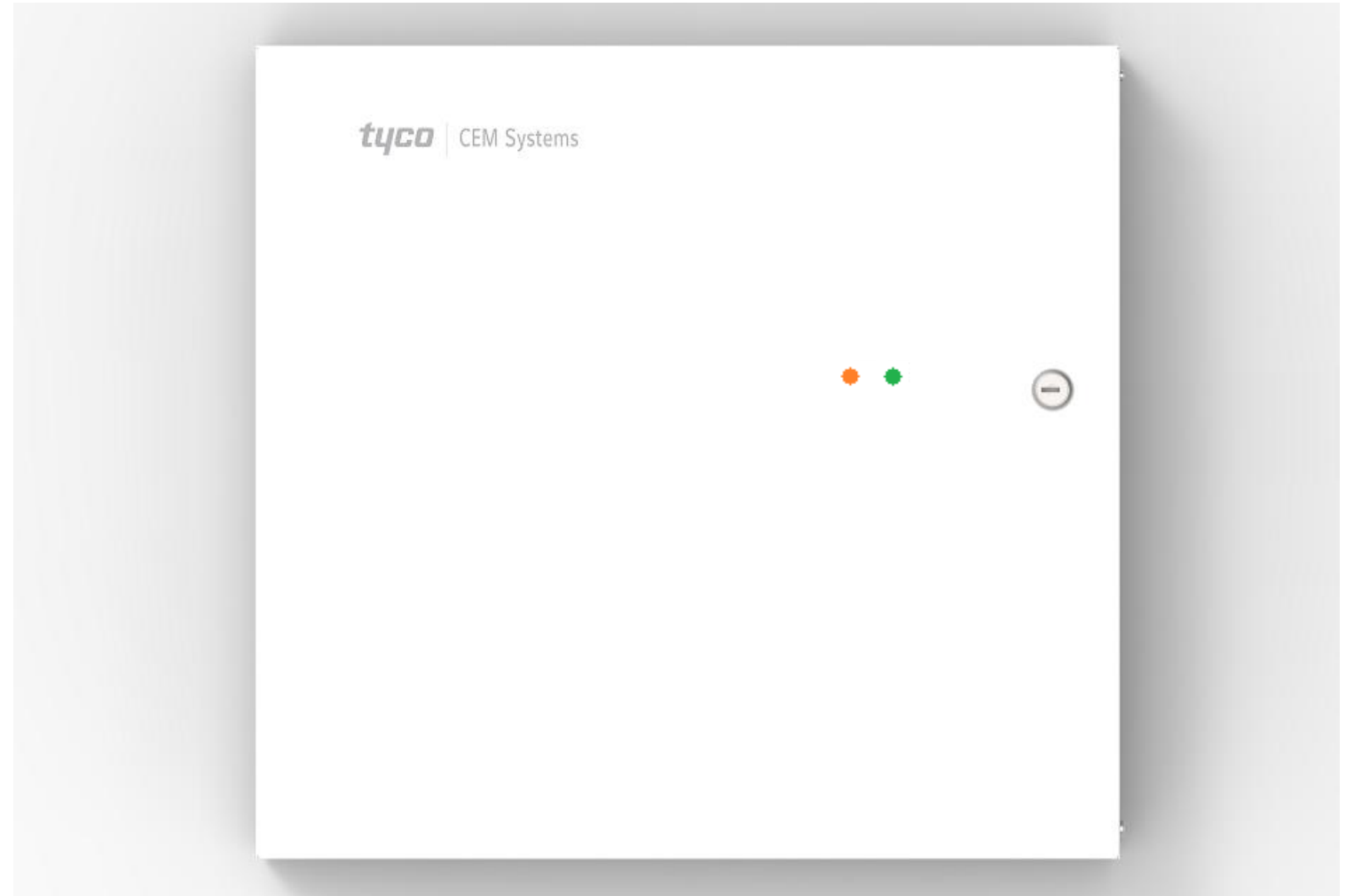
Four Door Intelligent IP
Controller

DCM400 Intelligent True Four Door Controller

ENGAGE
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- Installer led design
- Power for future needs
- Interactive
- Compatibility
- Flexible
- Secure

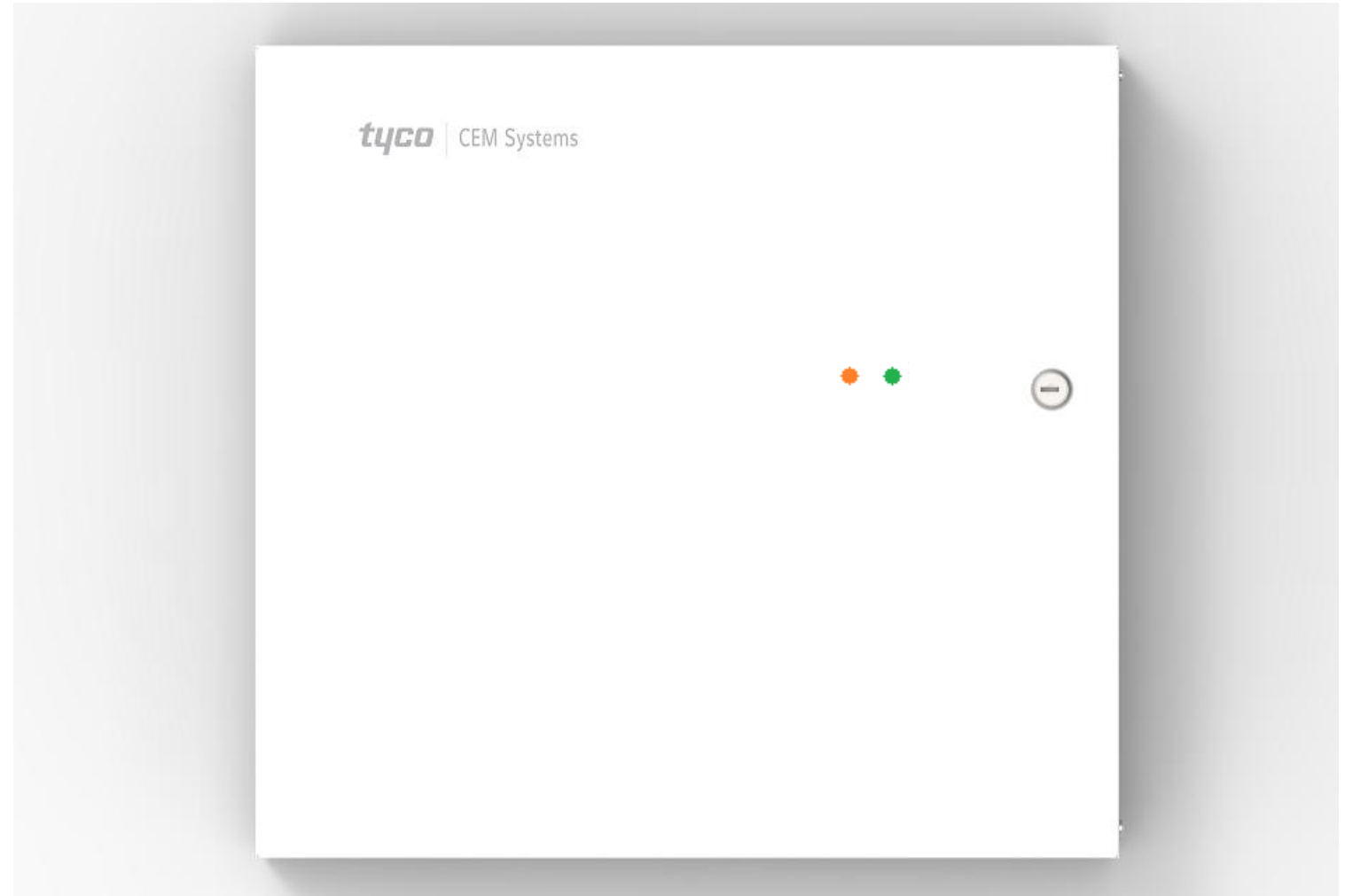


DCM400 Intelligent True Four Door Controller

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- **Installer led design**
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■ Enclosure

- Easy access mounting points
- Punch outs for 20mm & 25mm
- Removable door for access
- Key and security screw
- Four-way two-part connectors
- External DC & Fault LEDs
- Cable Tie points for wiring loom
- Proximity detection Tamper
- Secondary wired tamper

■ Flexible Power Options

- Mains Power
- POE+ 90W
- Board Only



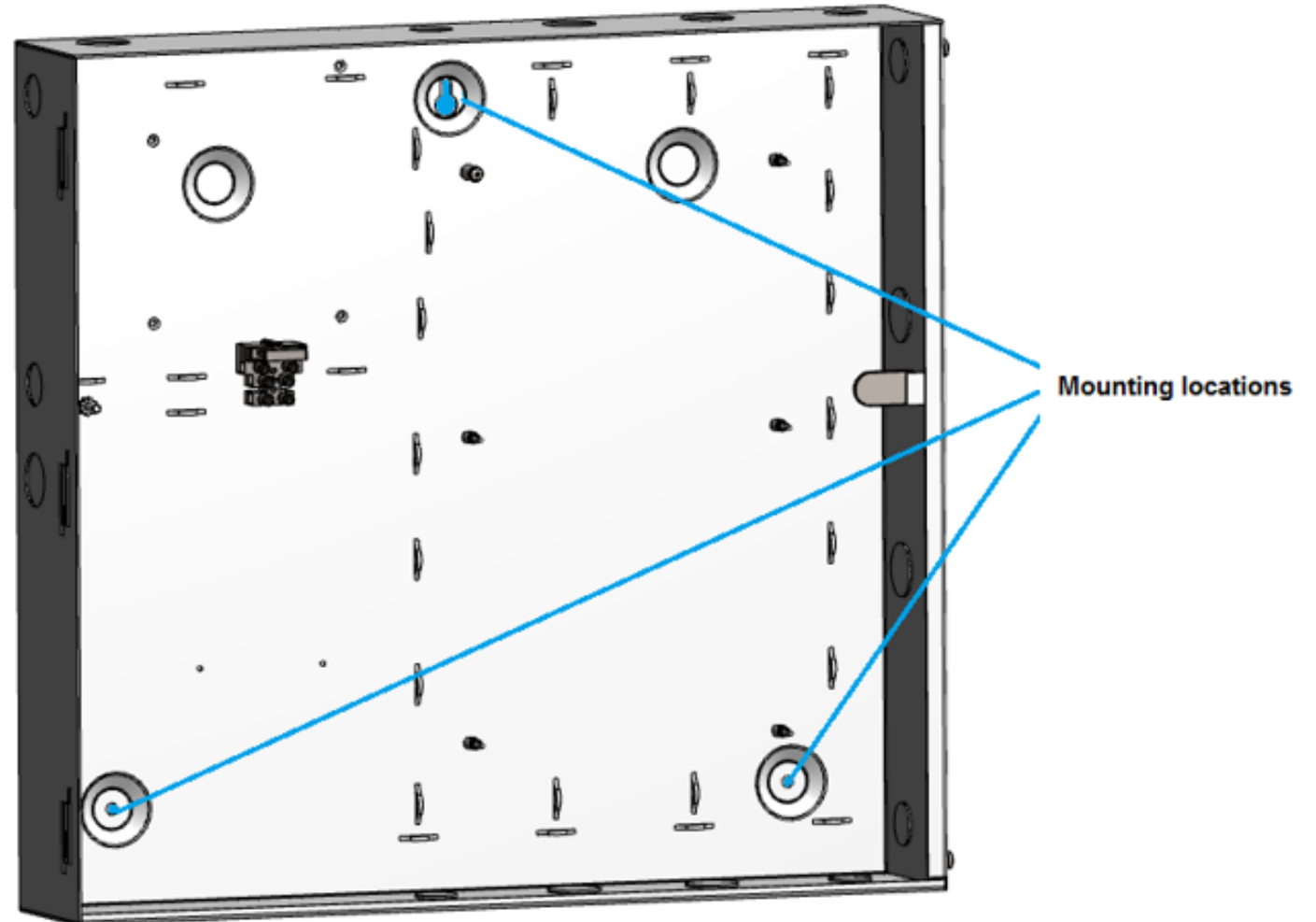


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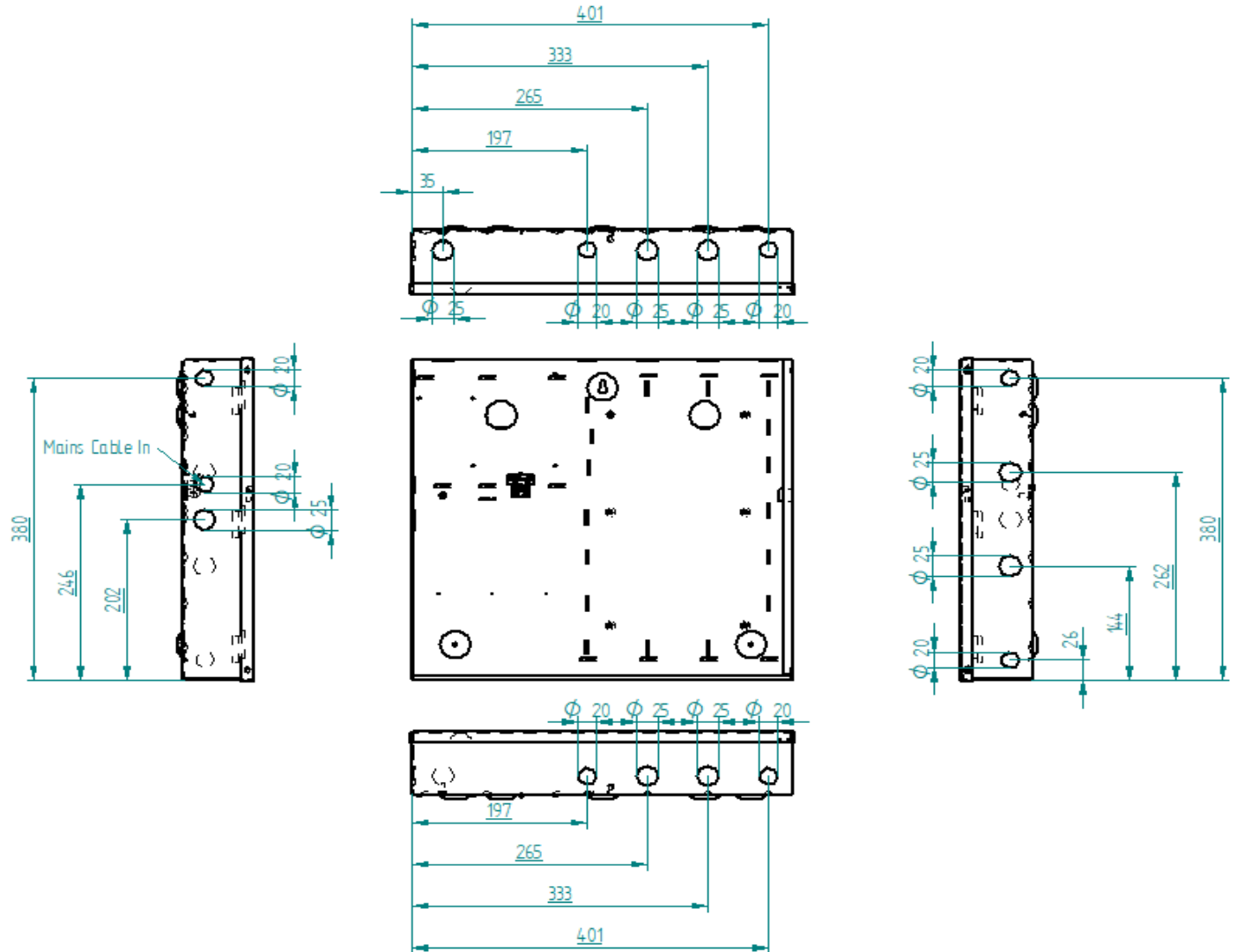


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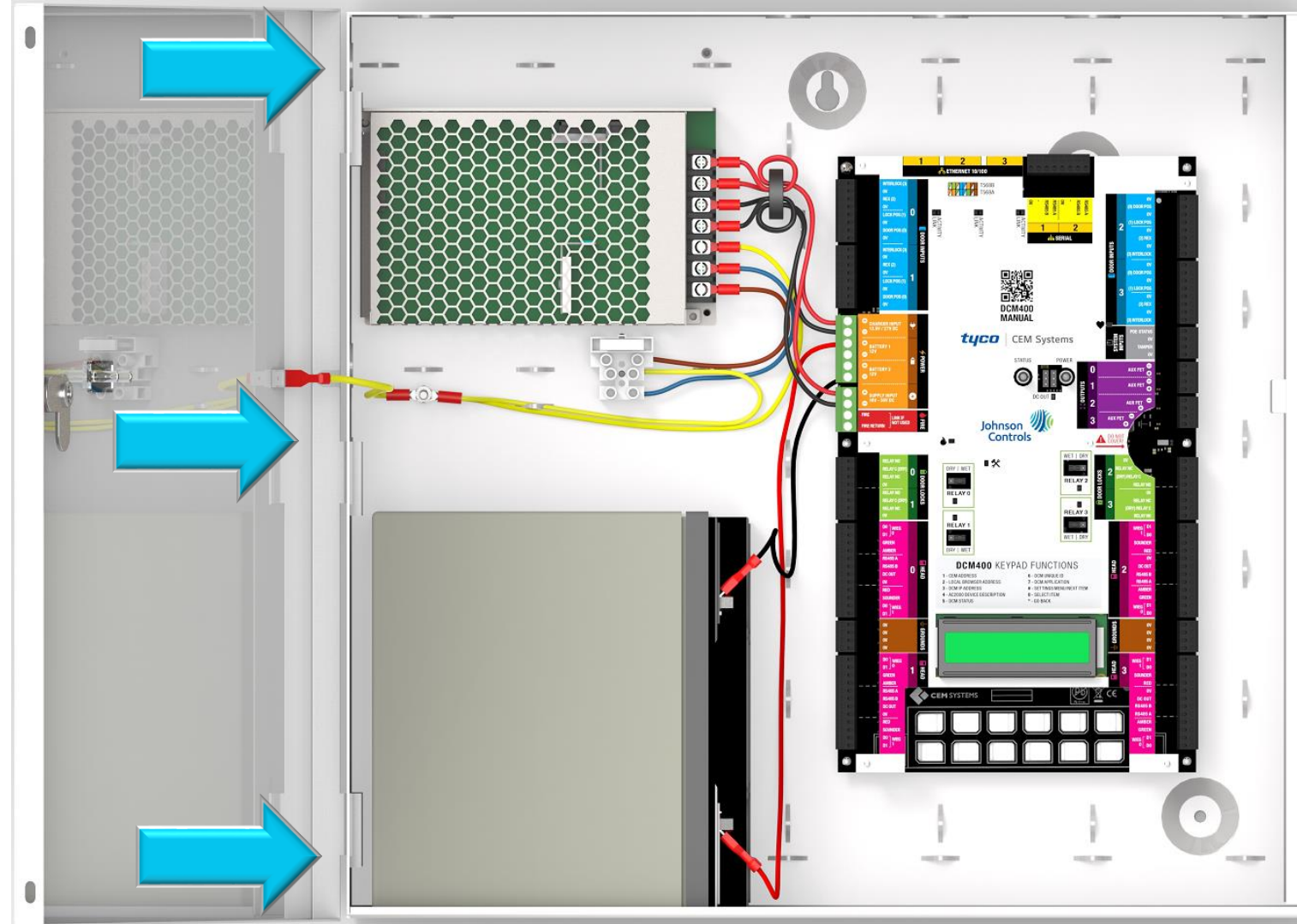


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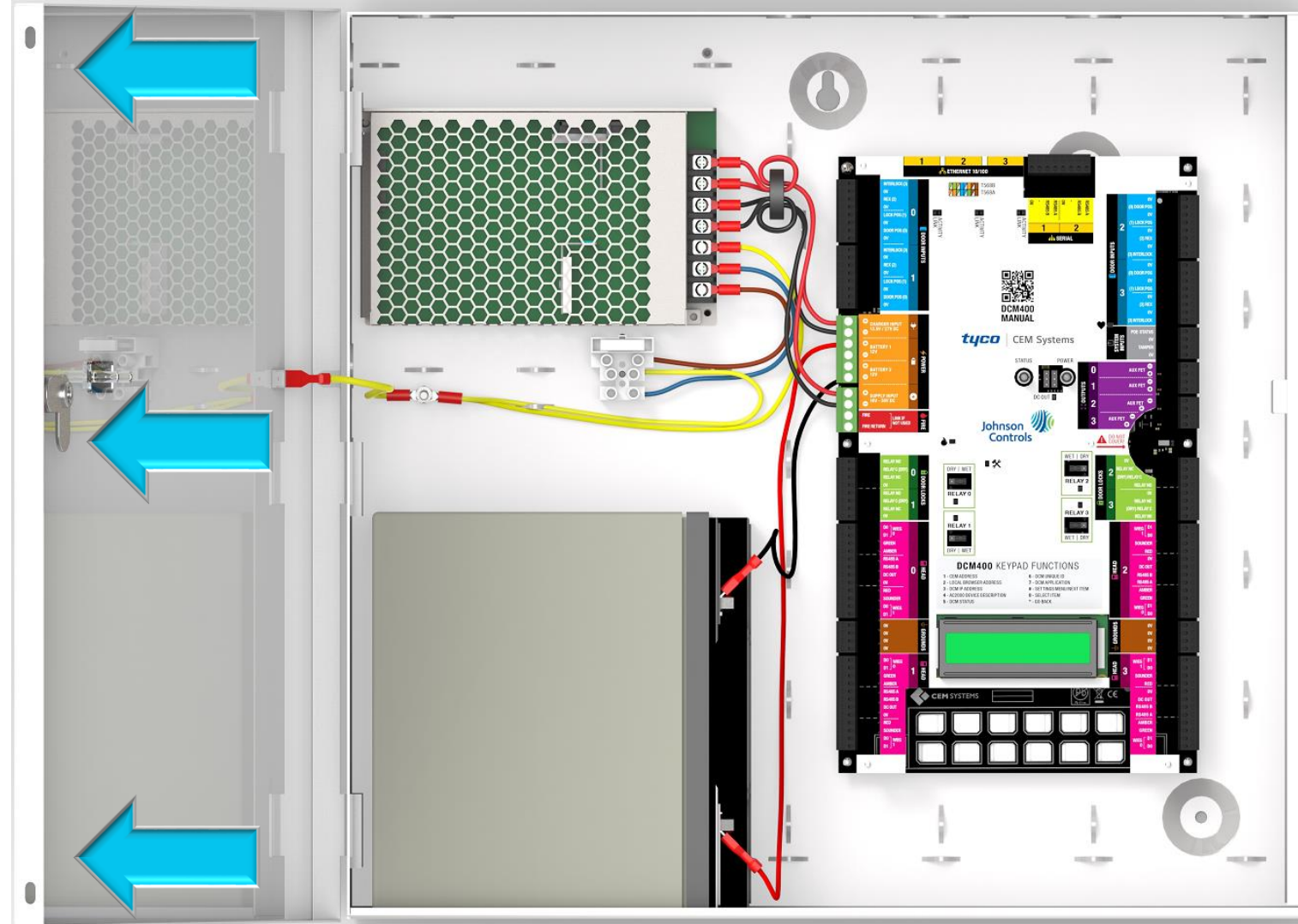


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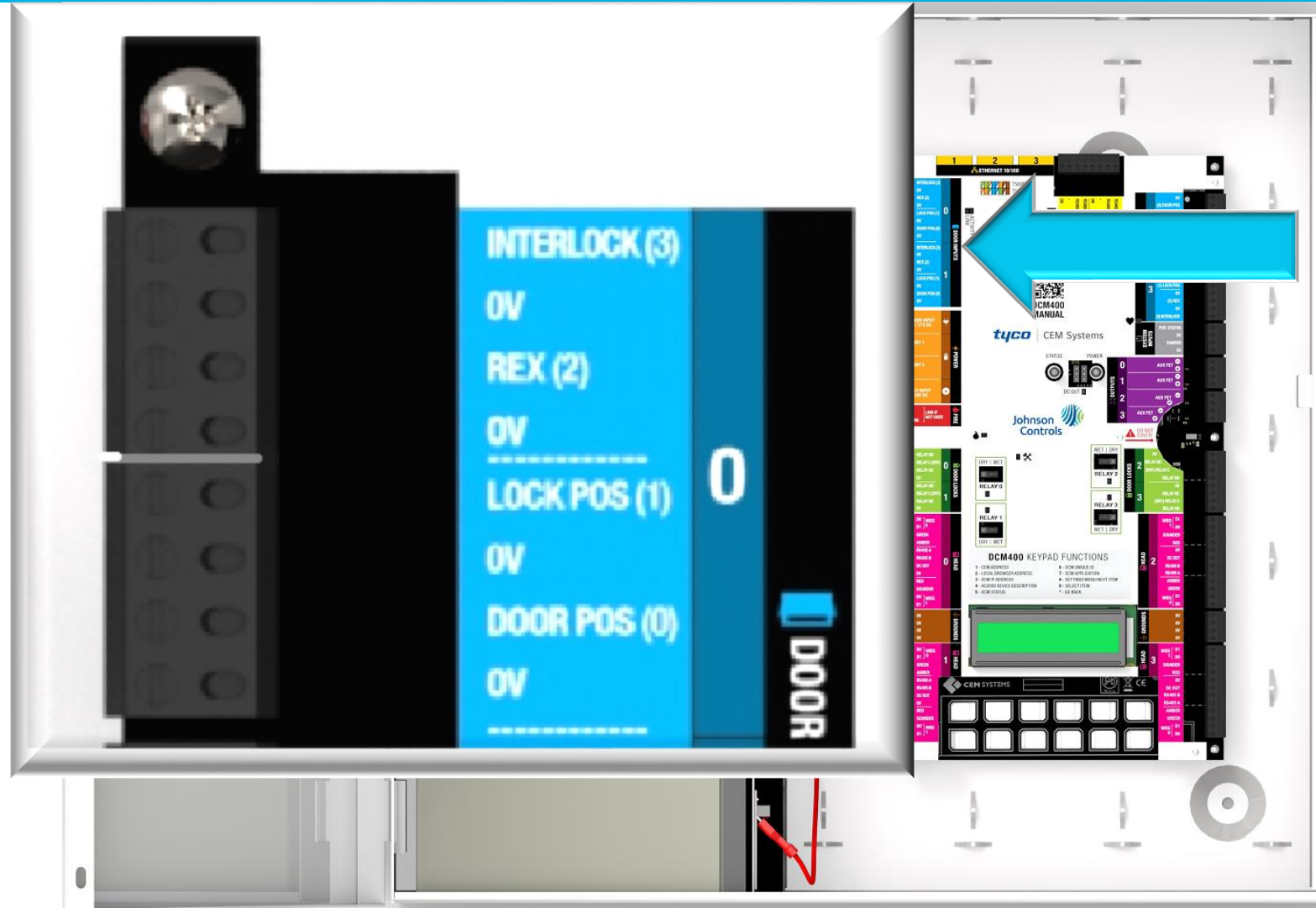


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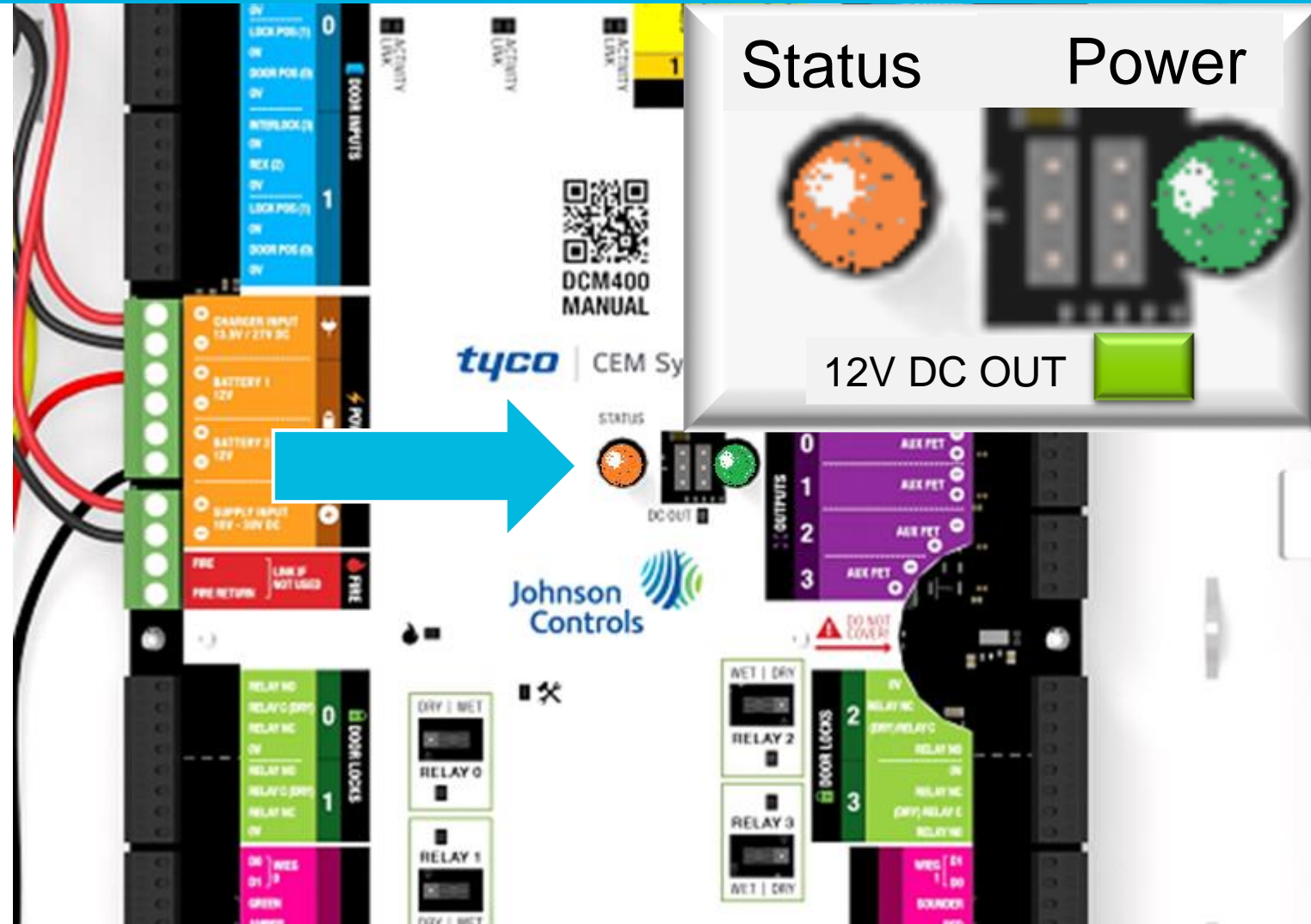


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Link Speed & Activity

Port 1 Default Enabled

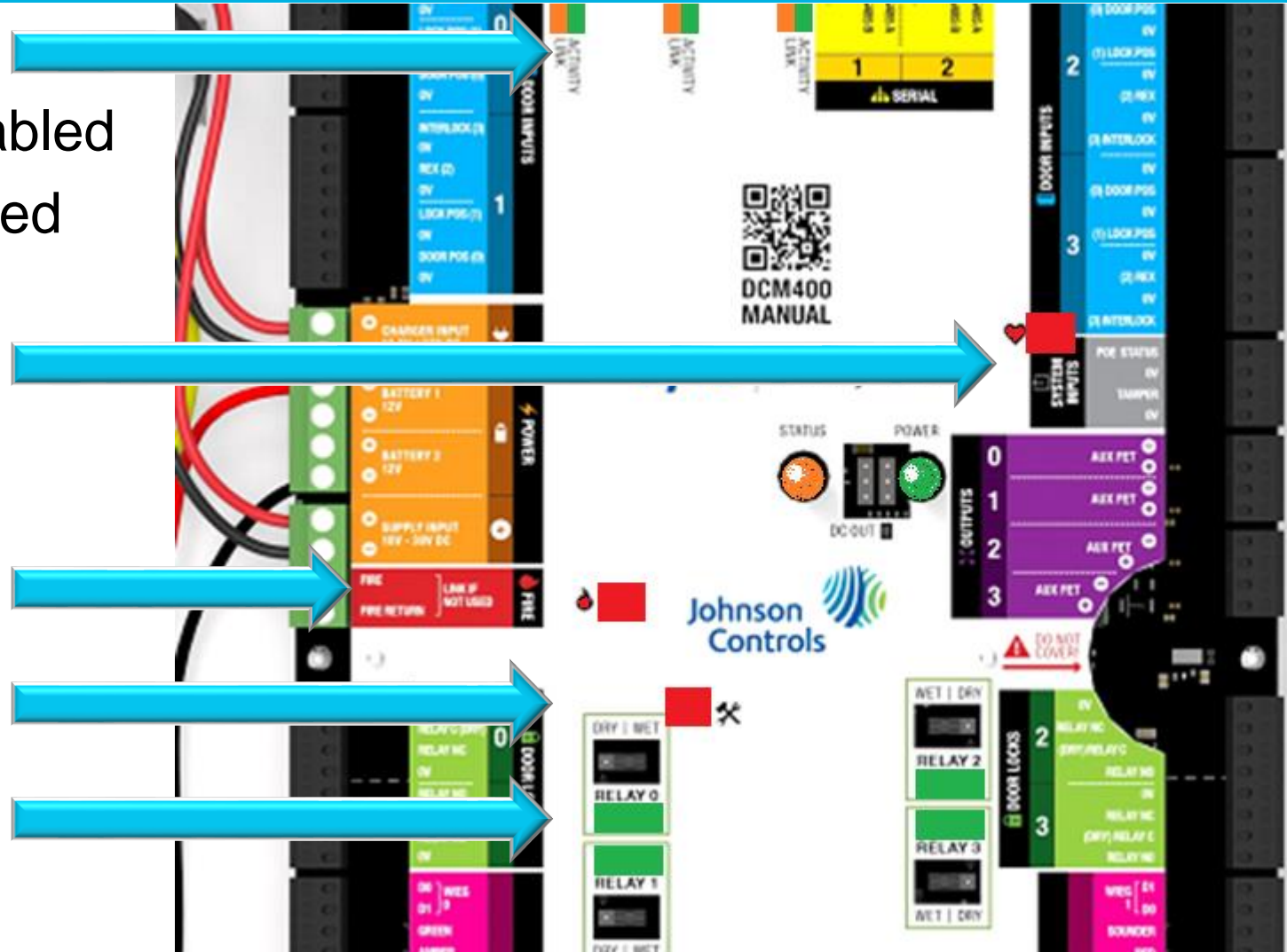
Port 2 & 3 User Enabled

DCM400 Heartbeat

Fire Interface Active

Power fault High / Low

Relay(s) Active



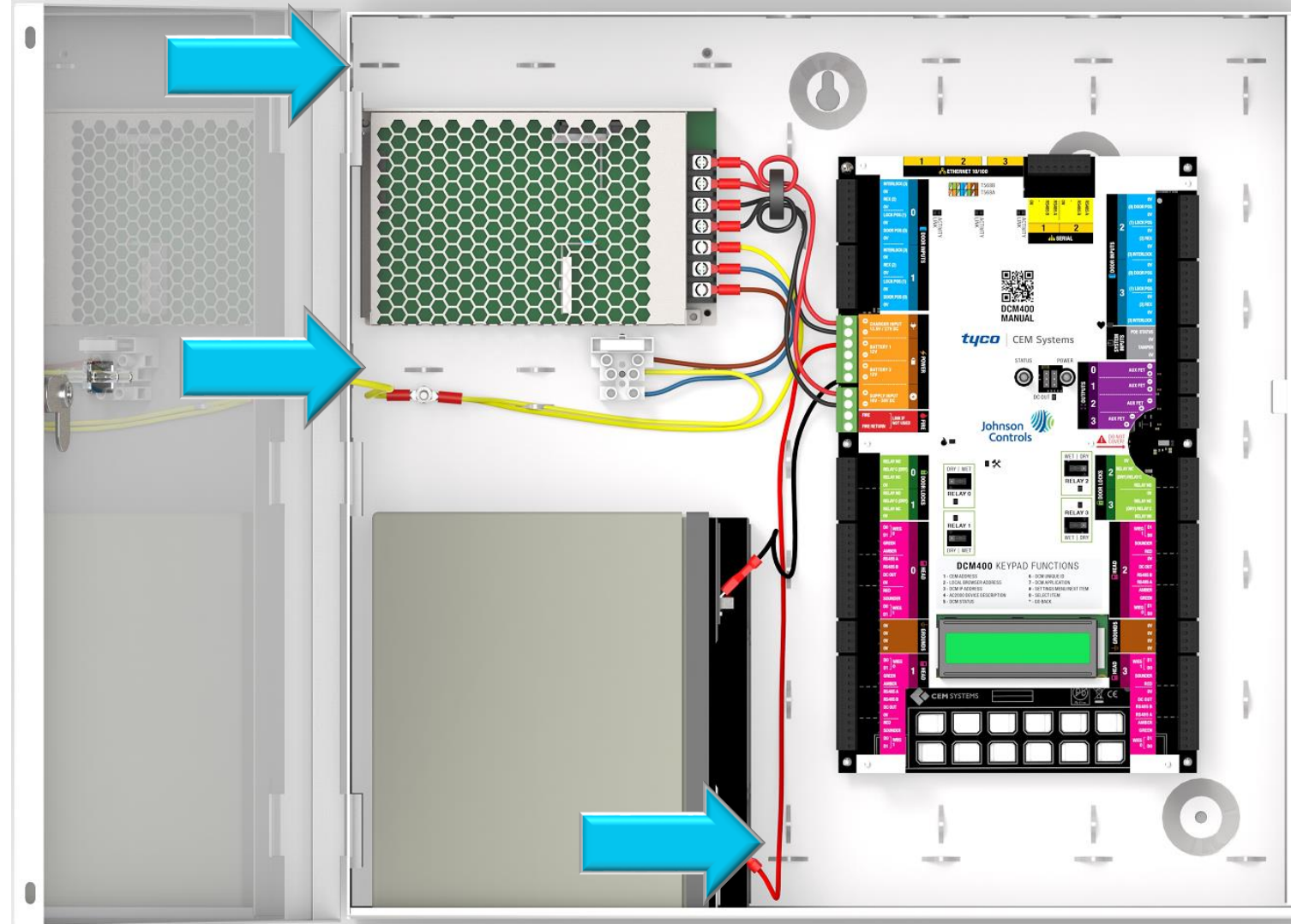


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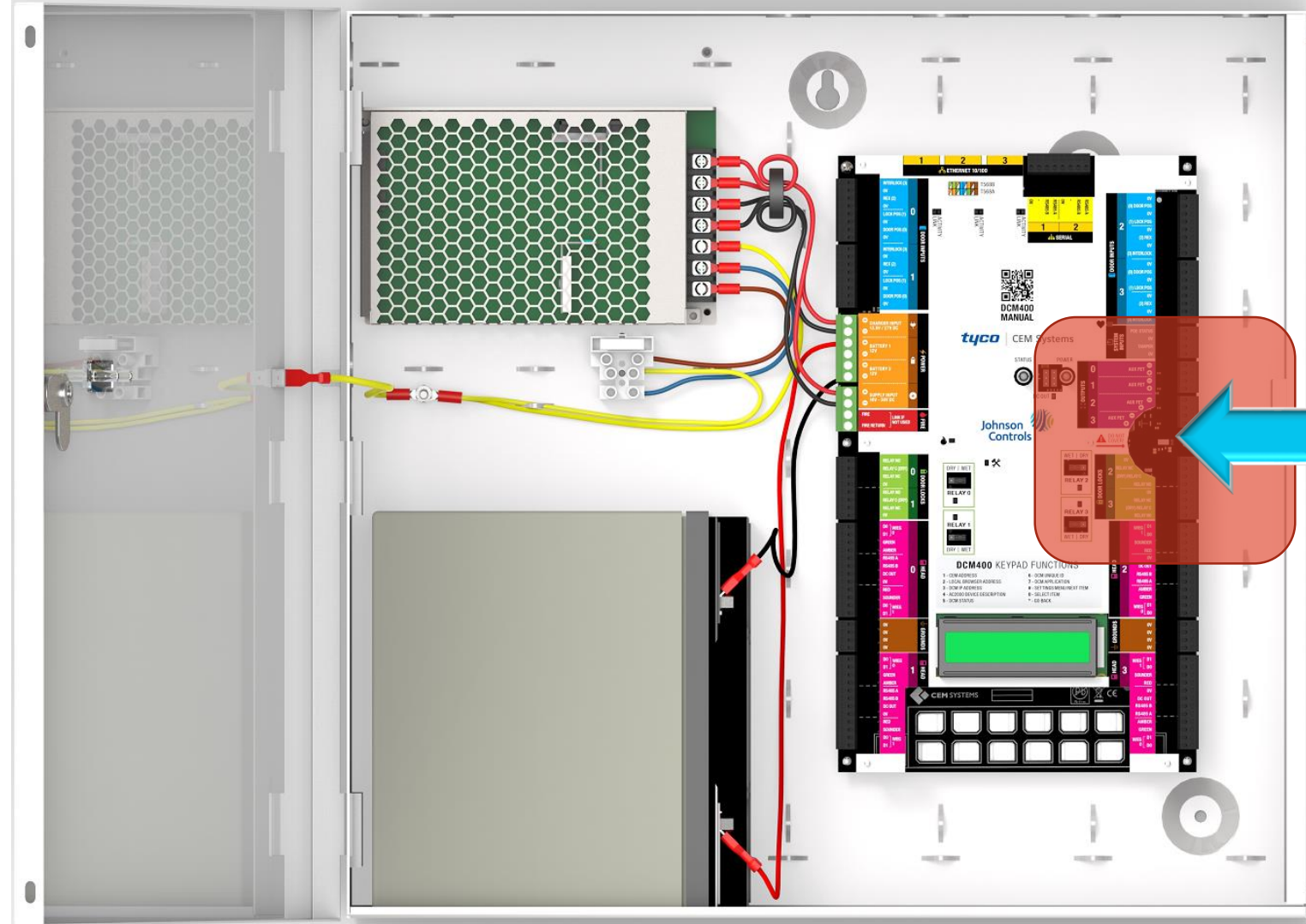


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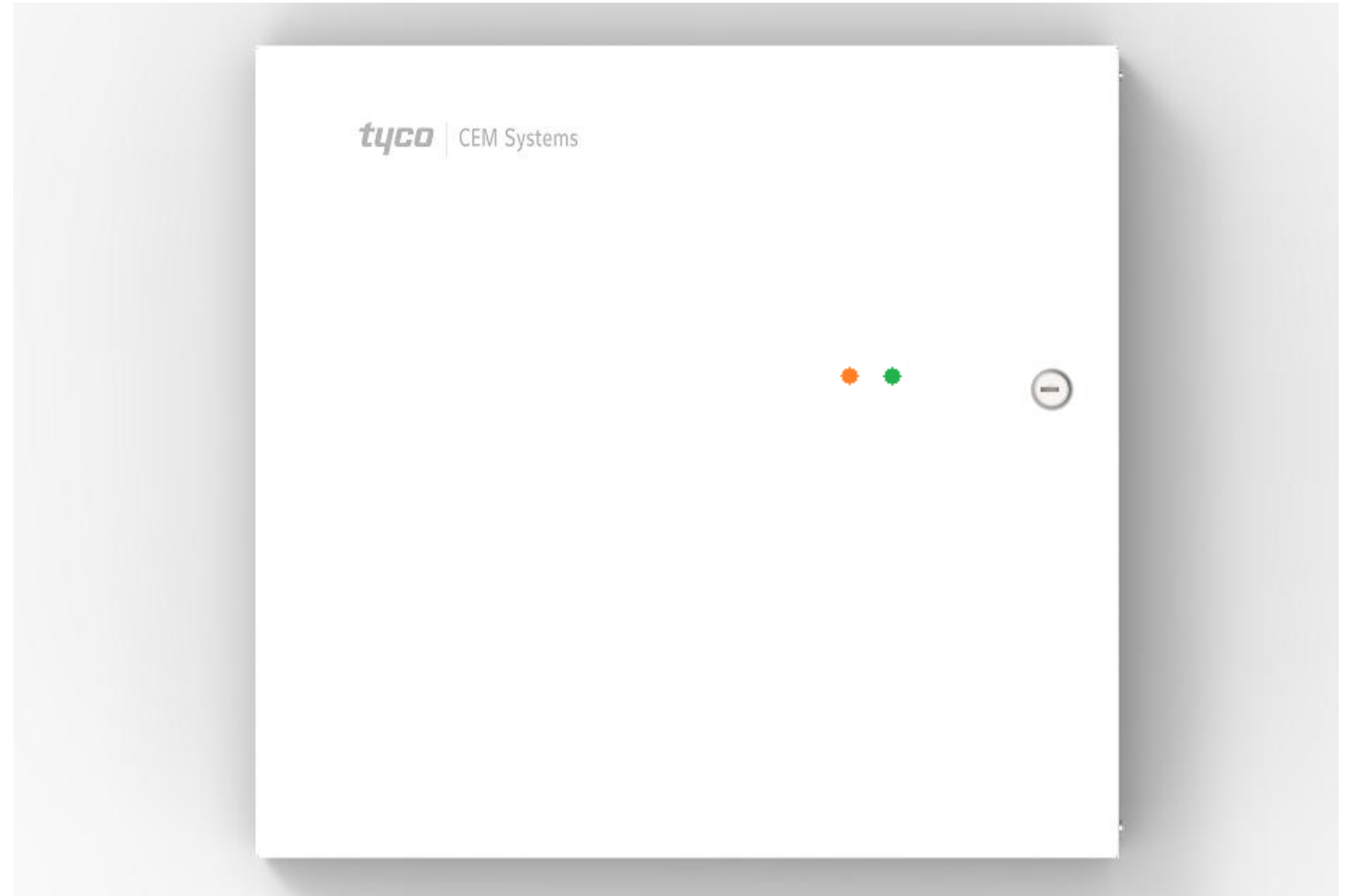


DCM400 Intelligent True Four Door Controller

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- **Installer led design**
- Power for future needs
- Interactive
- Compatibility
- Flexible
- Secure

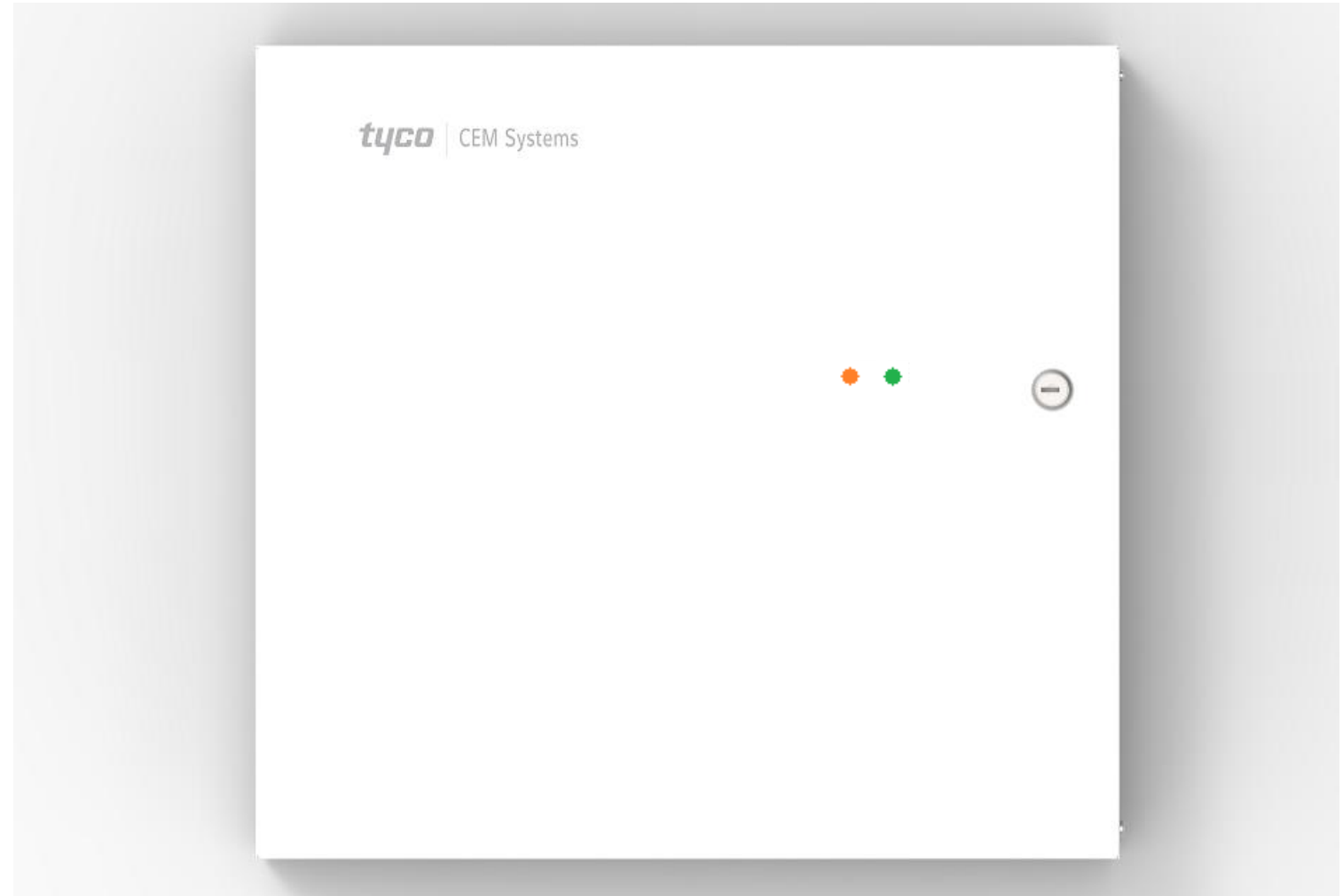


DCM400 Intelligent True Four Door Controller

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■ Mains PSU option

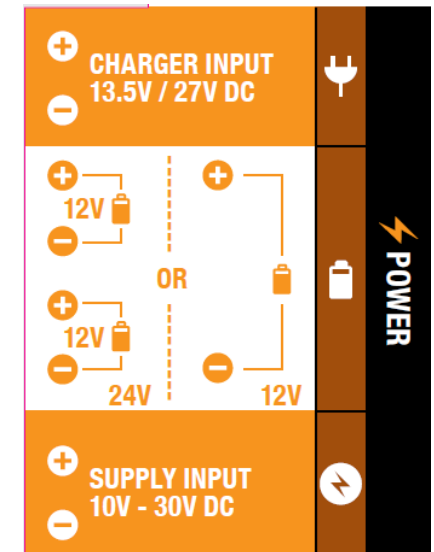
- 150W 10A @ 13.7V DC
- 230VAC / 115VAC switchable
- Passively cooled. Efficiency 87.5%

■ Power Over Ethernet PSU option

- POE 90W (71W min)
- Latest 802.3.bt standard (Oct 2018)

■ Board only

- From 12V - 28VDC DC Supply
- Smart power management with dedicated uP
- Supply Input automatically detected
- Under and Over voltage lockout and indication
- Reader power stabilised @ 12VDC Out
- Lock & Auxiliary power matches supply





■ Mains PSU option

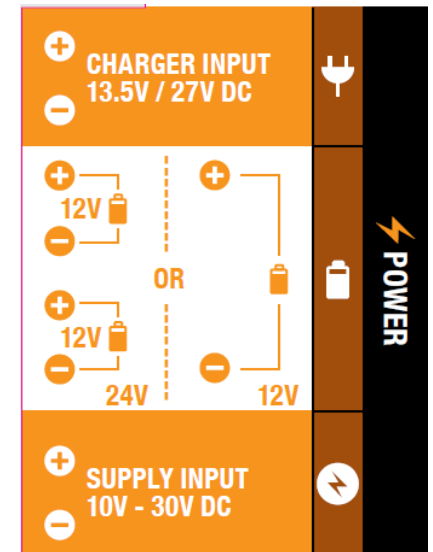
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Next Generation Power Over Ethernet PoE 90

More detail on Thursday

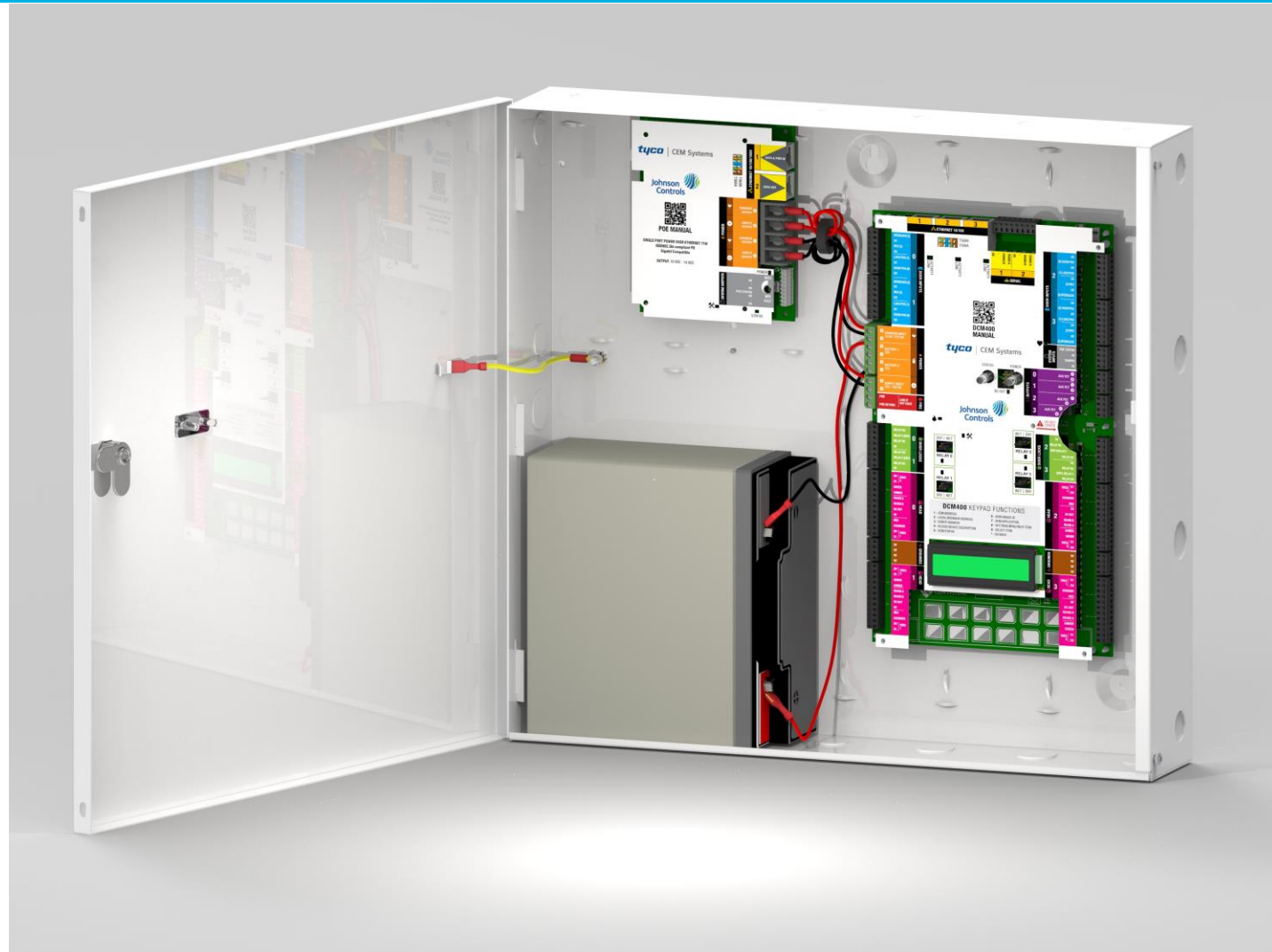


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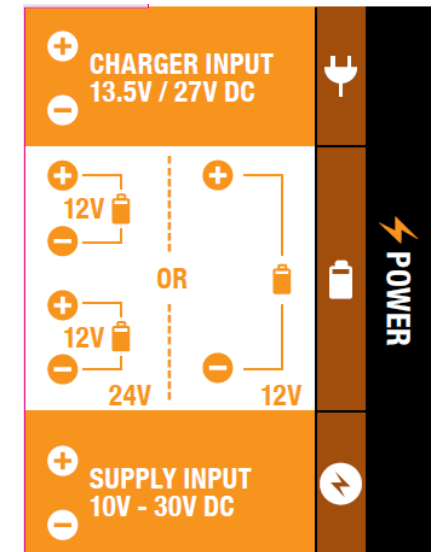
■ Flexible Power Options

- Mains Power
- **POE+ 90W**
- Board Only





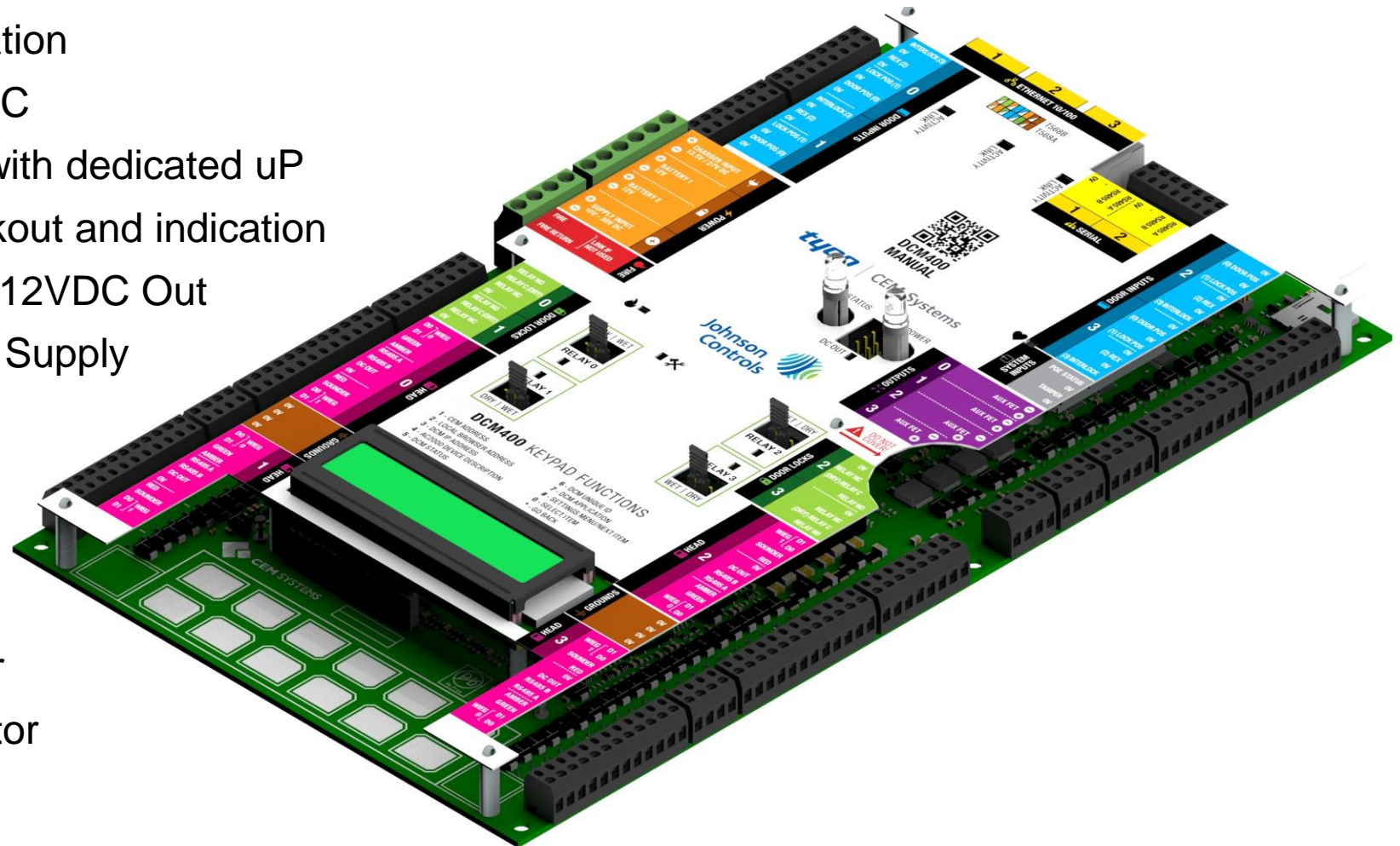
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 - Stabilised Reader power @ 12VDC Out
 - Lock & Auxiliary power from Supply





■ Board only

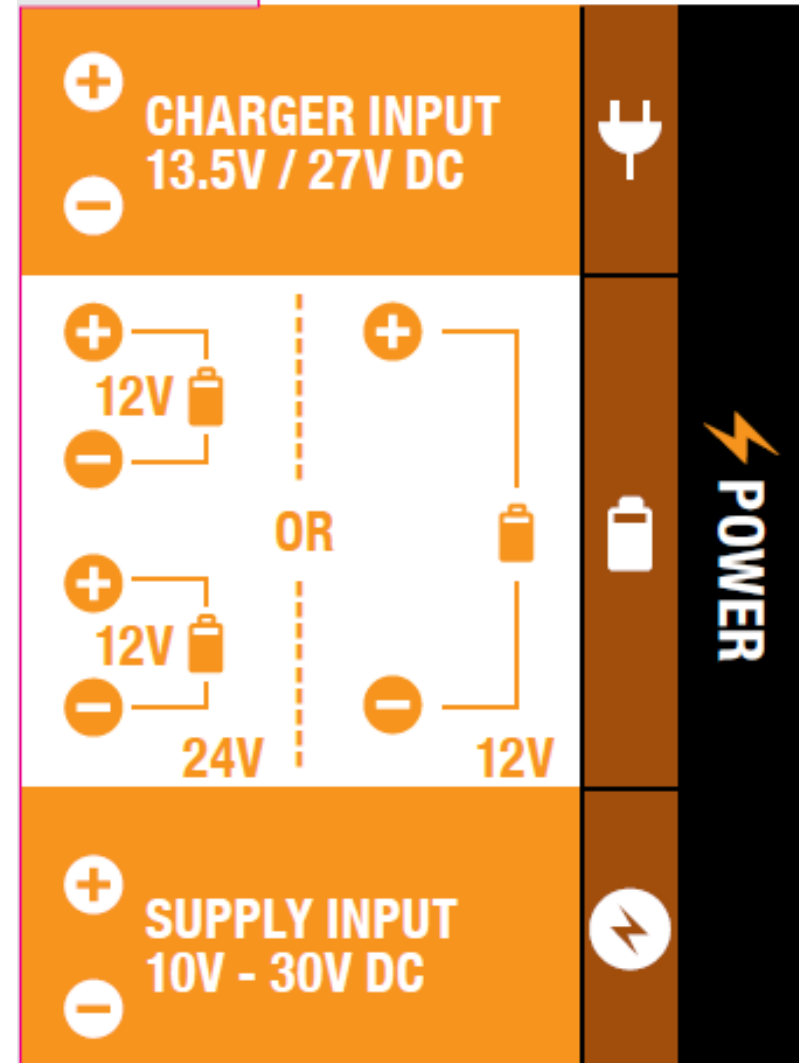
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- Supply from 12V - 28VDC DC
- Smart power management with dedicated uP
- Under and Over voltage lockout and indication
- Stabilised Reader power @ 12VDC Out
- Lock & Auxiliary power from Supply
- Wet or Dry Lock Power
- High power capability
- Fire interface
- Additional ground points
- On-board or external tamper
- Compact & flexible form-factor





■ Battery Charging on-board

- Auto-detects 12V/24V operation
- Separate charger input for stability and efficiency
- Charging, monitoring and fast switchover
- User selectable charge current
- Battery lockout on start-up
- Enclosure includes space for 12V with 1 x 17Ah SVLA
- Future 24V
 - Enclosure mounts for optional battery shelf
 - 24V @ 2 x 7Ah SVLA
 - Individual 12V SVLA health monitoring & charging
- Flexible battery clips with terminal and spade connections

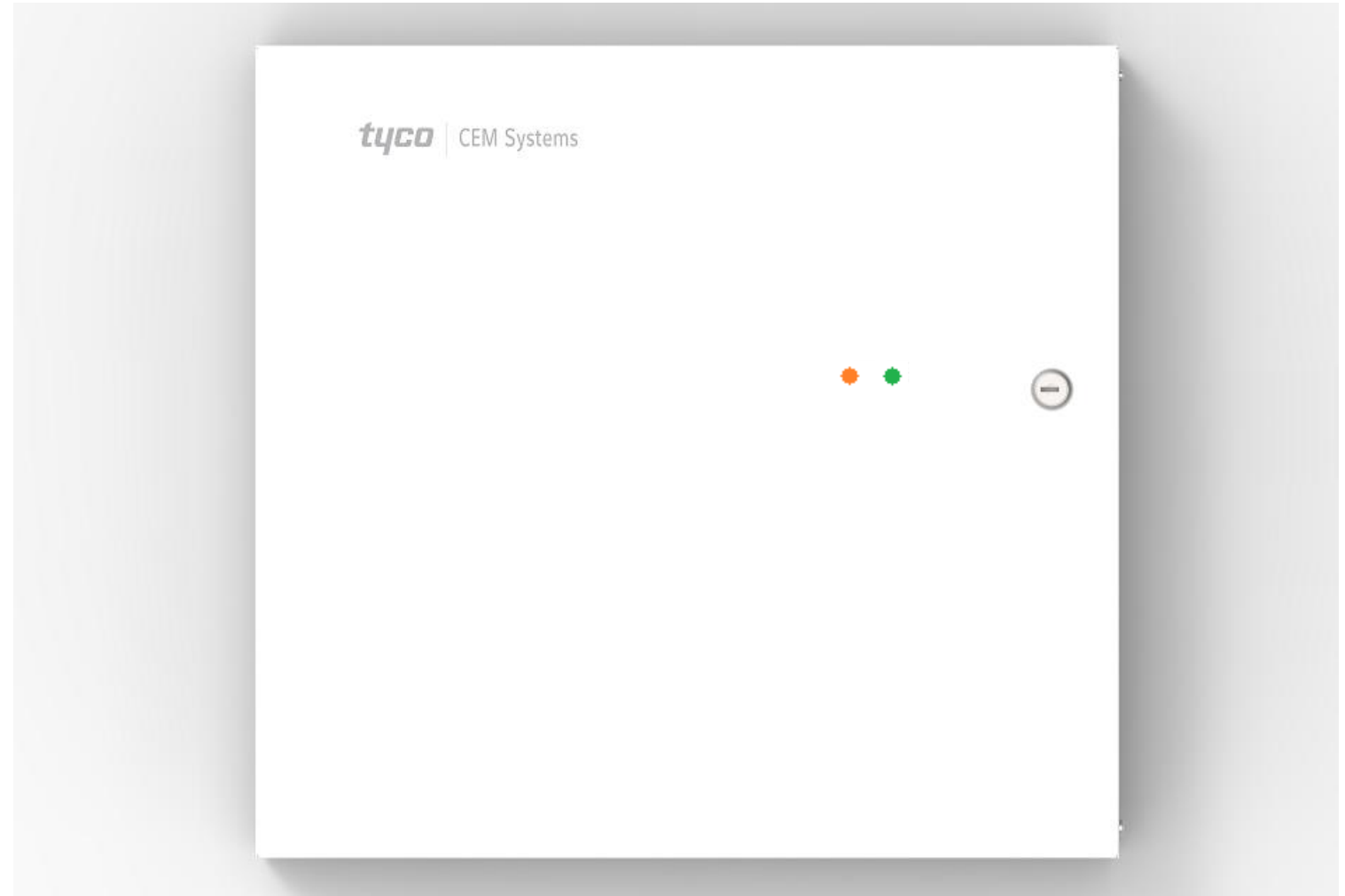


DCM400 Intelligent True Four Door Controller

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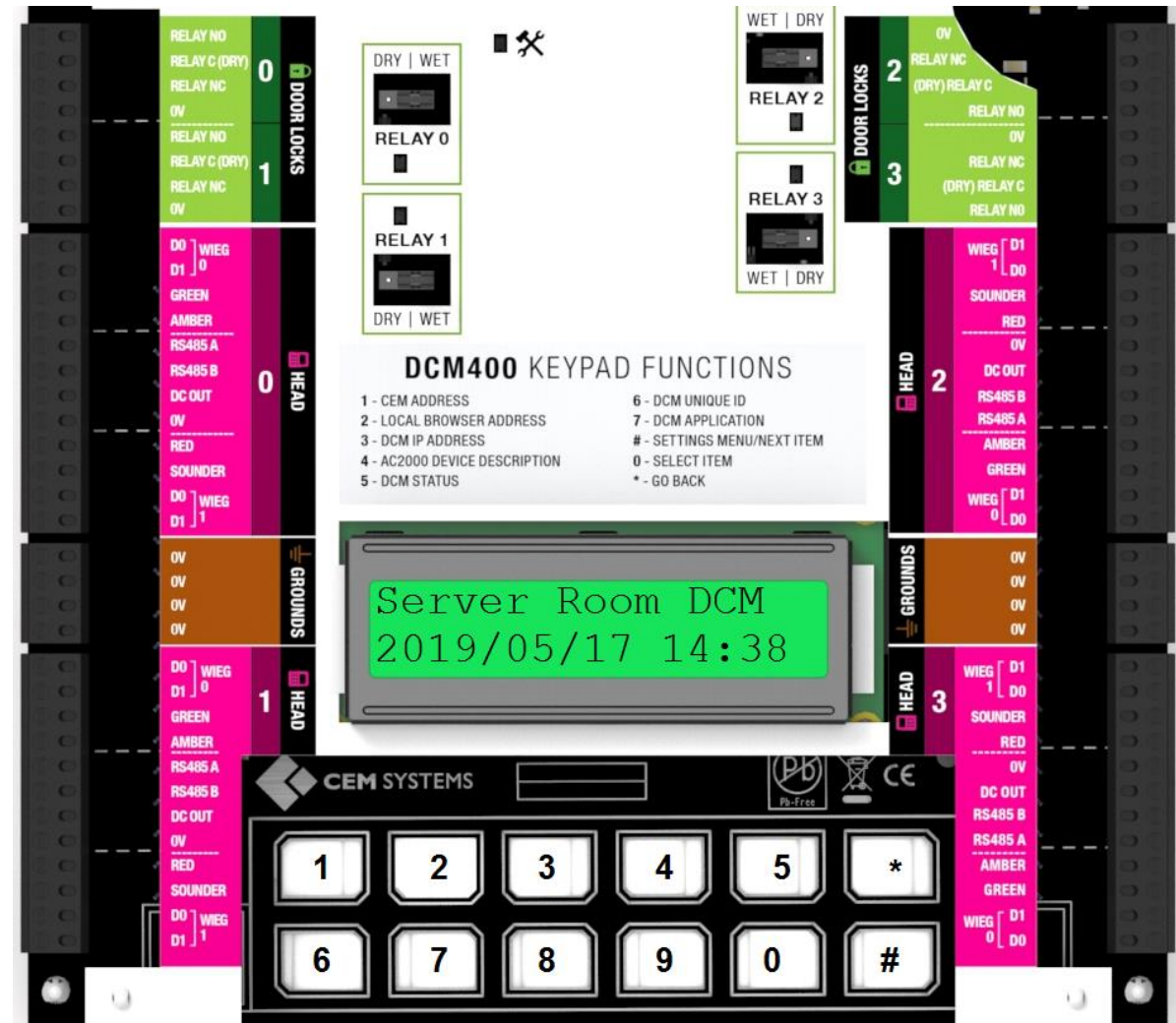


- **Installer led design**
- **Power for future needs**
- **Interactive**
- **Compatibility**
- **Flexible**
- **Secure**





- Install with LCD or Web
 - Setup
 - Diagnostics
 - Real-time updates
- Web Pages
 - Secure https connection
 - Admin or Guest view-only access
- LCD
 - Backlit 2x16 LCD
 - 12 Character touch keypad
- IP address allocation
 - DHCP
 - Temporary Link Local or
 - Static IP

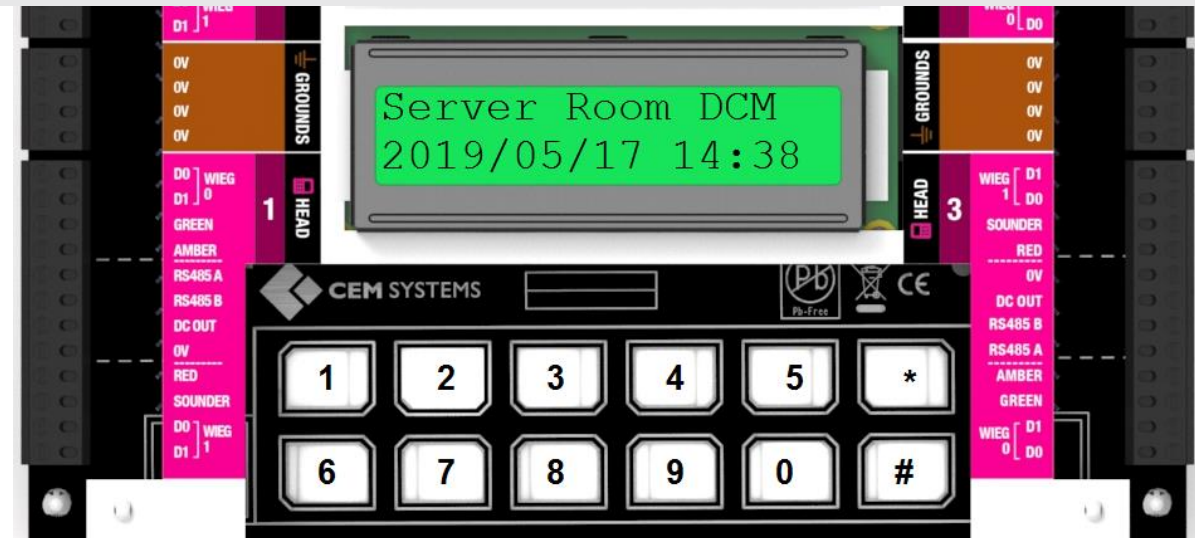




- LCD & Keypad for Setup
- Controller and Door descriptions
- Networking
 - Client connection (TLSv1.2)
 - AC2000 uses DCM Unique ID
 - DHCP, Link-local or Static IP
- Database
 - Card and Extra access
 - Buffered transactions
 - Future update from 250K to 500k pending
- Door Diagnostics
 - Wiegand & OSDP readhead status
 - Card swipes and Door status

KEYPAD FUNCTIONS

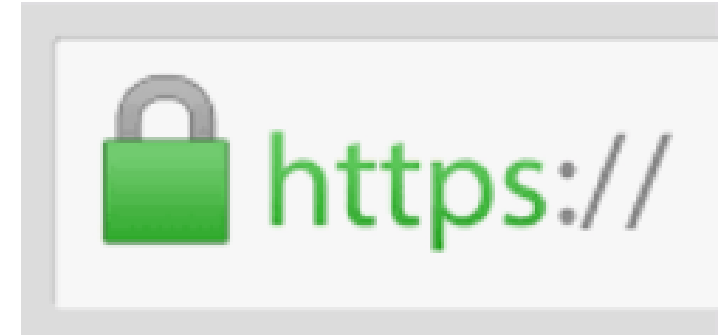
- | | |
|------------------------------------|--------------------------------|
| 1 - CEM ADDRESS OF DOOR 0 | 7 - DCM400 APPLICATION VERSION |
| 2 - LOCAL BROWSER URL ADDRESS | 8 - RTC LINK STATUS |
| 3 - DCM400 IP ADDRESS | 9 - READ HEAD STATUS |
| 4 - AC2000 DEVICE DESCRIPTION | 0 - DOOR STATUS / SELECT ITEM |
| 5 - DCM400 COMMS & DATABASE STATUS | # - SETTINGS MENU / NEXT ITEM |
| 6 - DCM400 UNIQUE ID | * - GO BACK |





■ Secure https connection for Admin or Guest

- Settings for Network IP
 - Auto (DHCP) Addressing
 - Network Mask
 - Default Gateway
 - RTC (host) IP address



DCM400 four door controller

Options

- Home
- DCM400 Status
- Database Status
- Inputs States
- Outputs Status
- Power Status
- Network Status
- Version Infomation
- Power Supply Setting
- IP Settings

Network Settings

Warning ! If this DCM IP address is changed; You will need to change the IP address on your browser to re-connect to these pages.

Auto (DHCP) IP Address

DCM400 IP Address

Network Mask

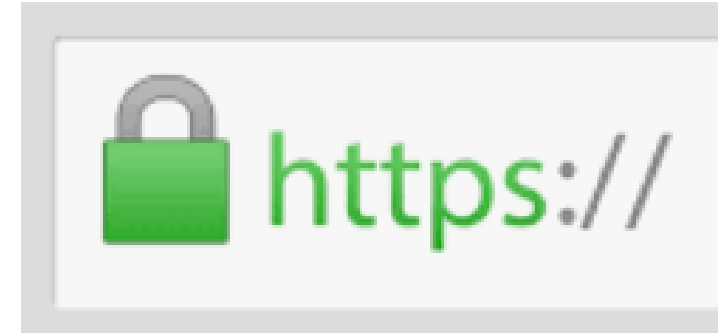
Default Gateway

RTC (host) IP Address



■ Secure https connection for Admin or Guest

- Status at a glance for commissioning :
 - System up time
 - Fire alarm
 - Case tamper
 - Communications links
 - **Real-time Door activity**

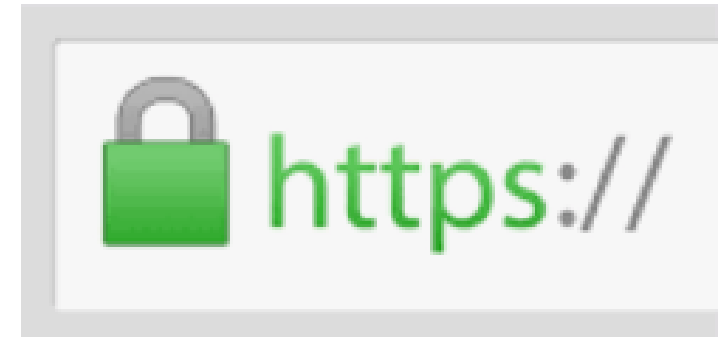


System		Details	
AC2000 description		DW MDC	
DCM run time		01 hrs 19 mins	
Data link to RTC (host)		Good	
Fire alarm input		Safe	
Case tamper		Safe	
Door details		Door status	
0	[00AB0] 00AB0		Present card
1	[00AC0] 00AC0		Present card
2	[00AD0] 00AD0		Enter door PIN
3	[FFFF0] - Not assigned -		Present card
Auto refresh <input checked="" type="checkbox"/>			



■ Secure https connection for Admin or Guest

- Status at a glance for commissioning :
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 - Communications links
 - Real-time Door activity
 - **Power Supply**
 - **Motherboard temperature**
 - **Battery condition**



Item	Value	Level
Supply Voltage	13.2 V	<div><div style="width: 100%;"></div></div>
Battery Voltage	13.3 V	<div><div style="width: 100%;"></div></div>
Battery Mid Voltage	0.0 V	<div><div style="width: 0%;"></div></div>
Internal temperature	35.9 C	<div><div style="width: 25%;"></div></div>
Battery Status	0.0 mA	<div><div style="width: 0%;"></div></div>

Auto refresh



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- Status at a glance for commissioning :
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 - **Real-time Supervised Inputs**

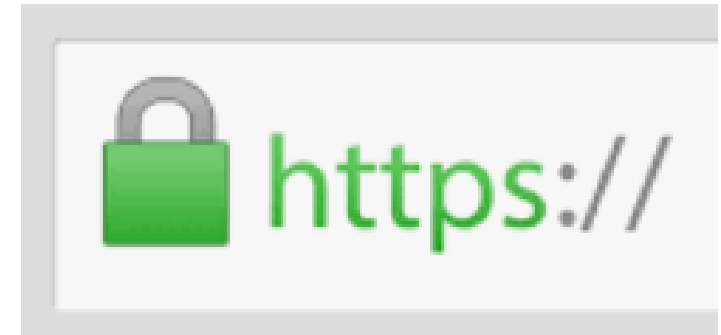
Door	Open 2 State	Open 4 State	Closed 4 State	Closed 2 State
0: Input 0				
0: Input 1				
0: Input 2				
0: Input 3				
1: Input 0				
1: Input 1				
1: Input 2				
1: Input 3				
2: Input 0				
2: Input 1				
2: Input 2				
2: Input 3				
3: Input 0				
3: Input 1				
3: Input 2				
3: Input 3				

Auto refresh



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 - Power Supply
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 - Real-time Supervised Inputs
 - **User Selectable Current limits**
 - Real-time Supervised Outputs



Read head	State	Limit	Amps
Door 0 / 1	Normal	<input type="range"/>	0.750
Door 2 / 3	Normal	<input type="range"/>	0.750
Lock output	State	Limit	Amps
Door 0 / 1	Normal	<input type="range"/>	2.000
Door 2 / 3	Normal	<input type="range"/>	2.000
Aux. output	State	Limit	Amps
Door 0 / 1 / 2 / 3	Normal	<input type="range"/>	1.000

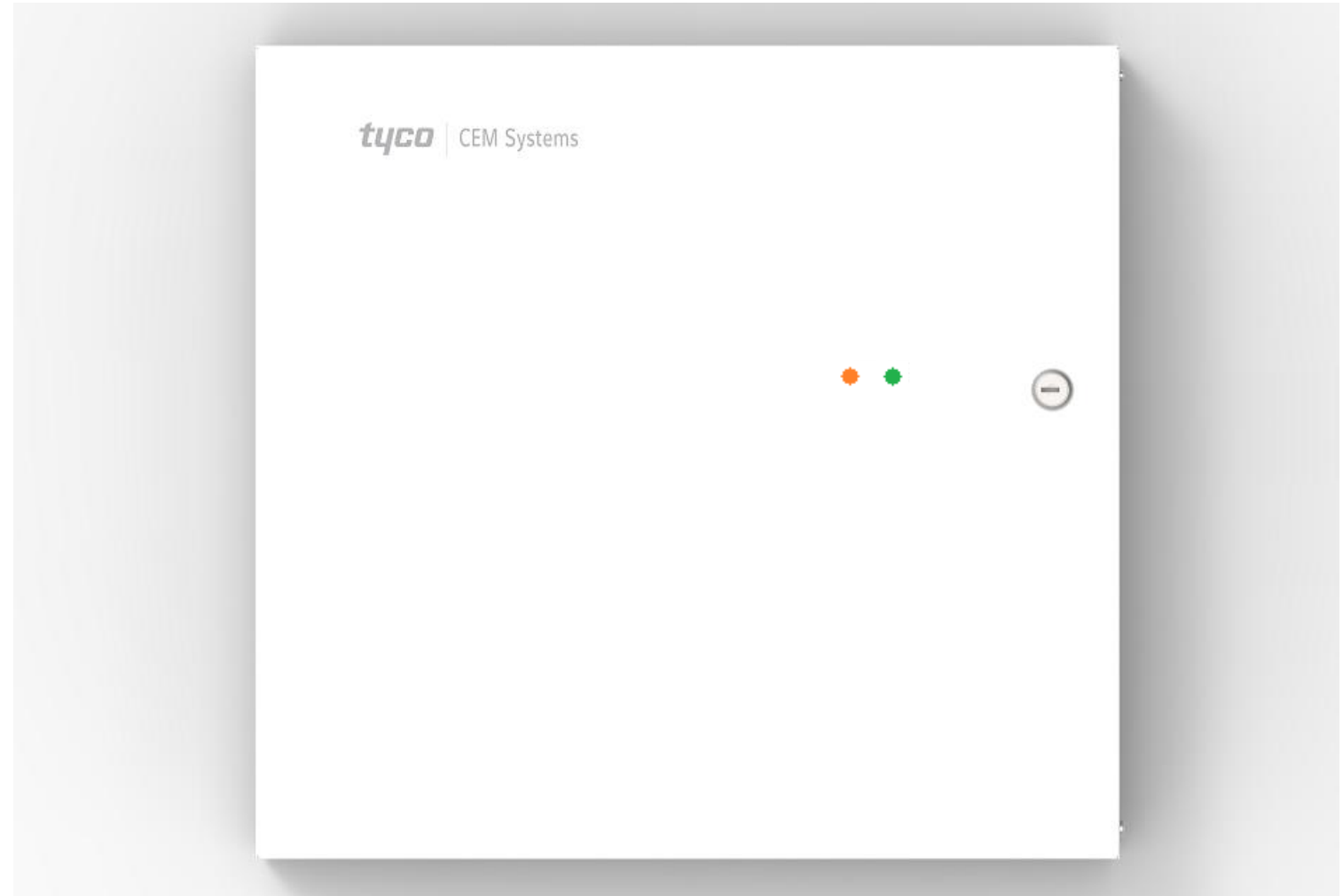
Auto. refresh

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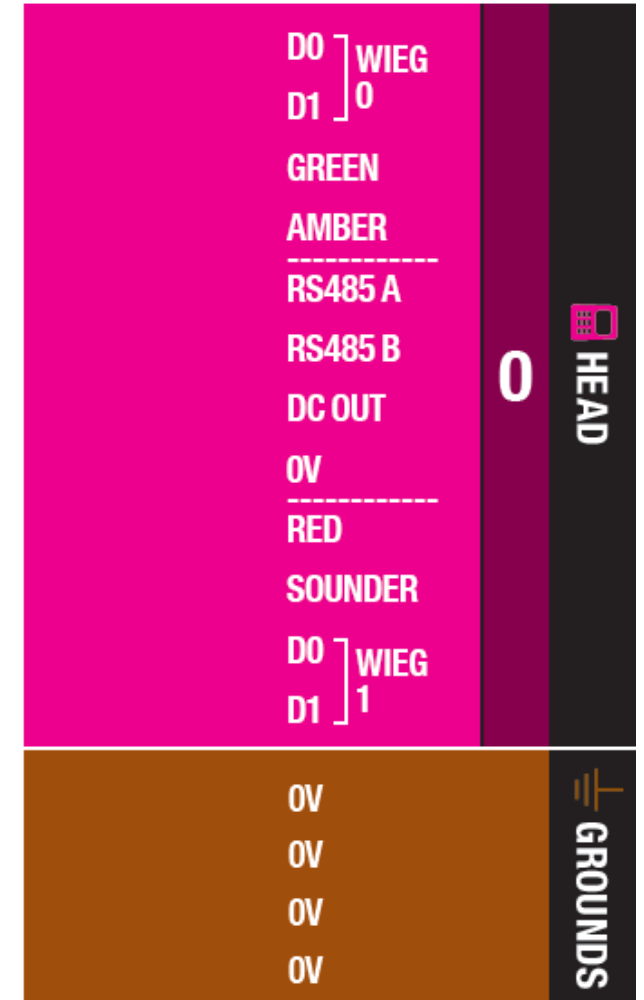


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- **Interactive**
- **Compatibility**
- **Flexible**
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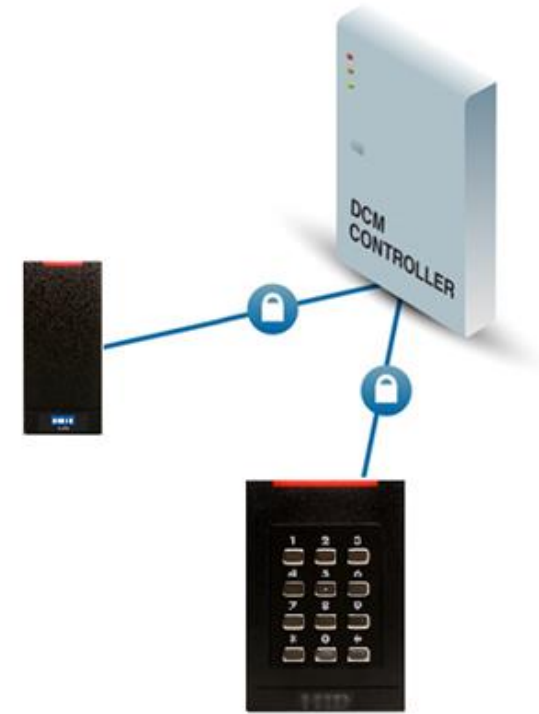


- AC2000 v10.2 or later
- Read heads
 - Dedicated Power Supply
 - Stabilised 12VDC
 - User selectable current limit from 250mA to 2A
 - Legacy Wiegand read-heads IN and OUT
 - Data links, Two or three LEDs & Sounder
 - Cable intensive - Potentially 16 connections





- AC2000 v10.2 or later
- Read heads
 - Dedicated Power Supply
 - Stabilised 12VDC
 - User selectable current limit from 250mA to 2A
 - Legacy Wiegand read-heads IN and OUT
 - Data links, Two or three LEDs & Sounder
 - Cable intensive - Potentially 16 connections
 - **OSDP Secure read-heads**
 - Standards based AES Encrypted protocol
 - Auto-detected
 - Pre-loaded key for CEM supplied OSDP read-heads
 - Easier to cable with power & multi-drop RS485



DCM400 Install Compatibility



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Connect to a centralised AC2000 Enterprise Server

AC2000 Server (Central Database Computer) Integrated Backup Software

AC2000 Enrolment Workstation (Visual Image Pass Production System)

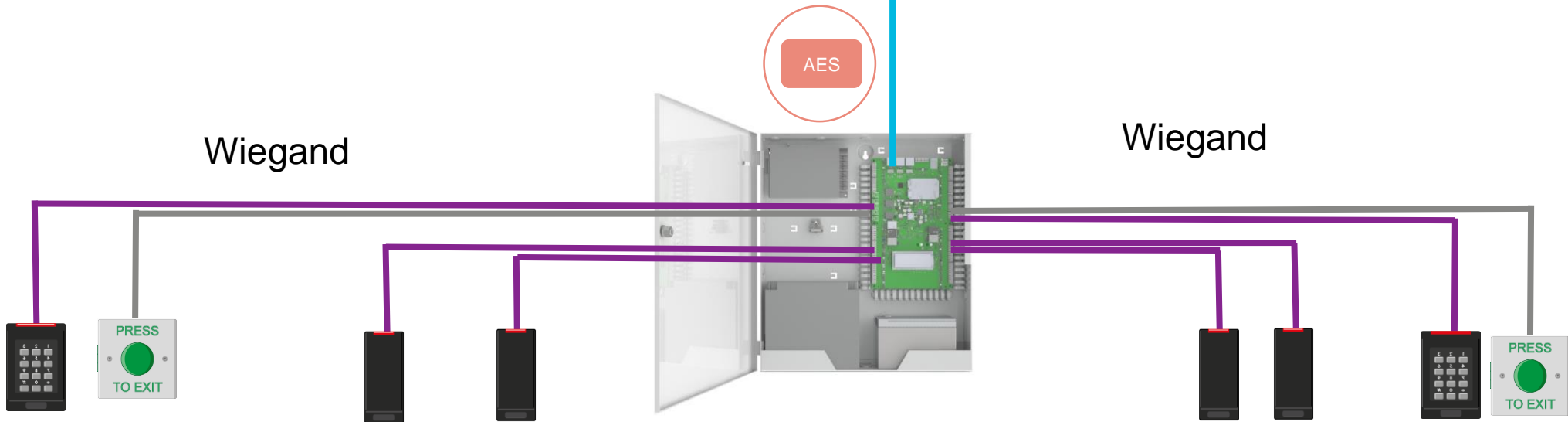
AC2000 Security Hub (Integrated Maps, Rolling Transaction Display, Intruder Detection, Fire Detection, Centralised Alarm Management)



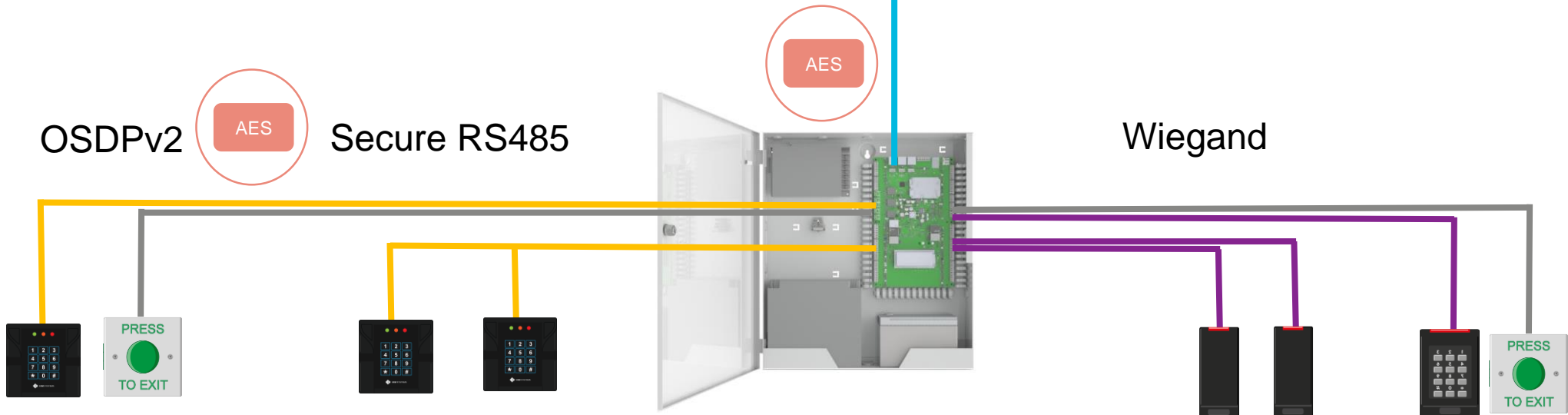
Ethernet Real Time Controller



AC2000 Ethernet Network



DCM400 Install Compatibility



DCM400 Install Compatibility



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AC2000 Server (Central Database Computer) Integrated Backup Software

AC2000 Enrolment Workstation (Visual Image Pass Production System)

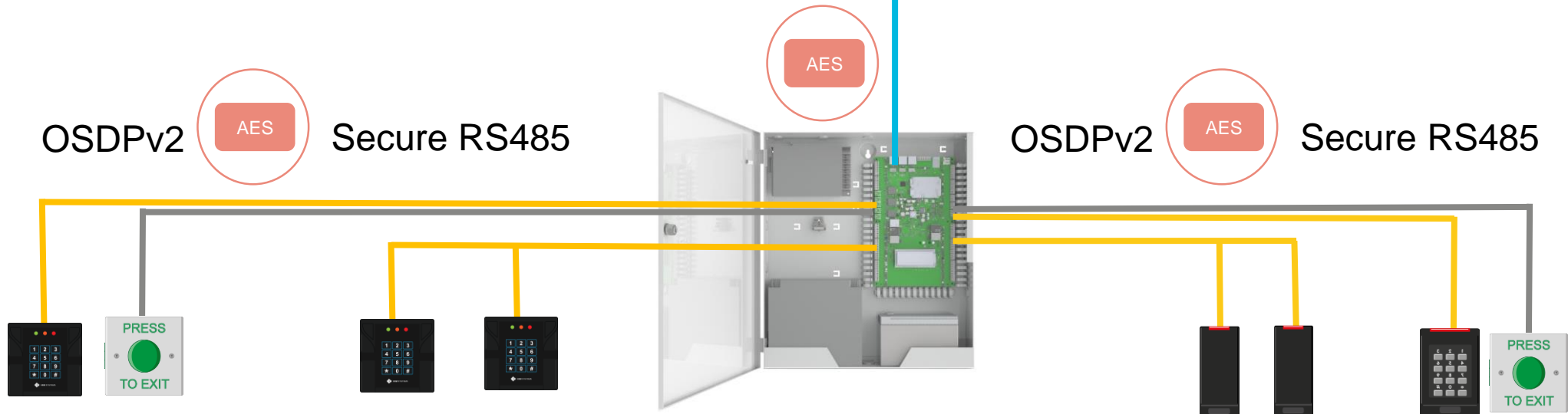
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Ethernet Real Time Controller



AC2000 Ethernet Network

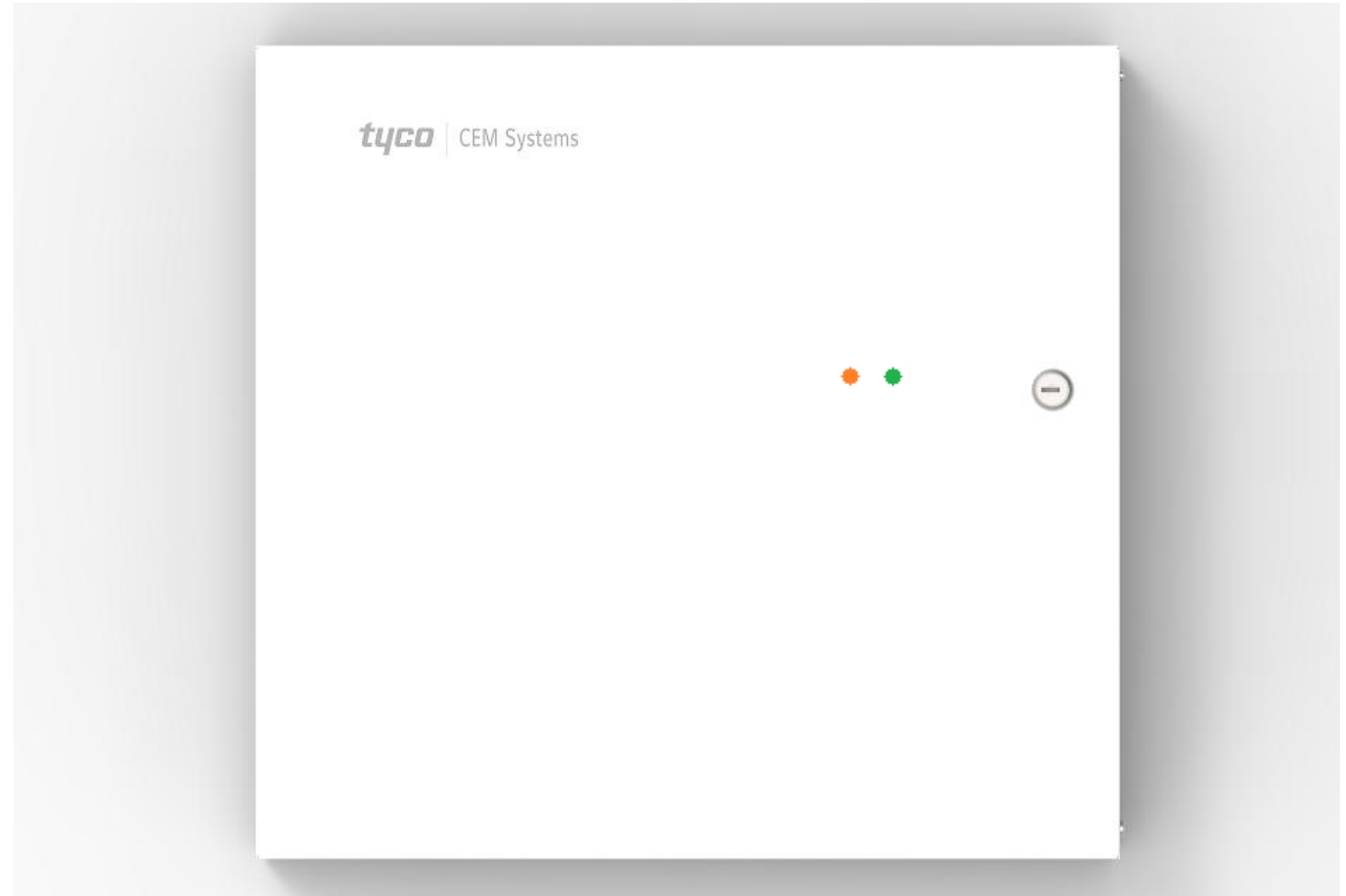


DCM400 Intelligent True Four Door Controller

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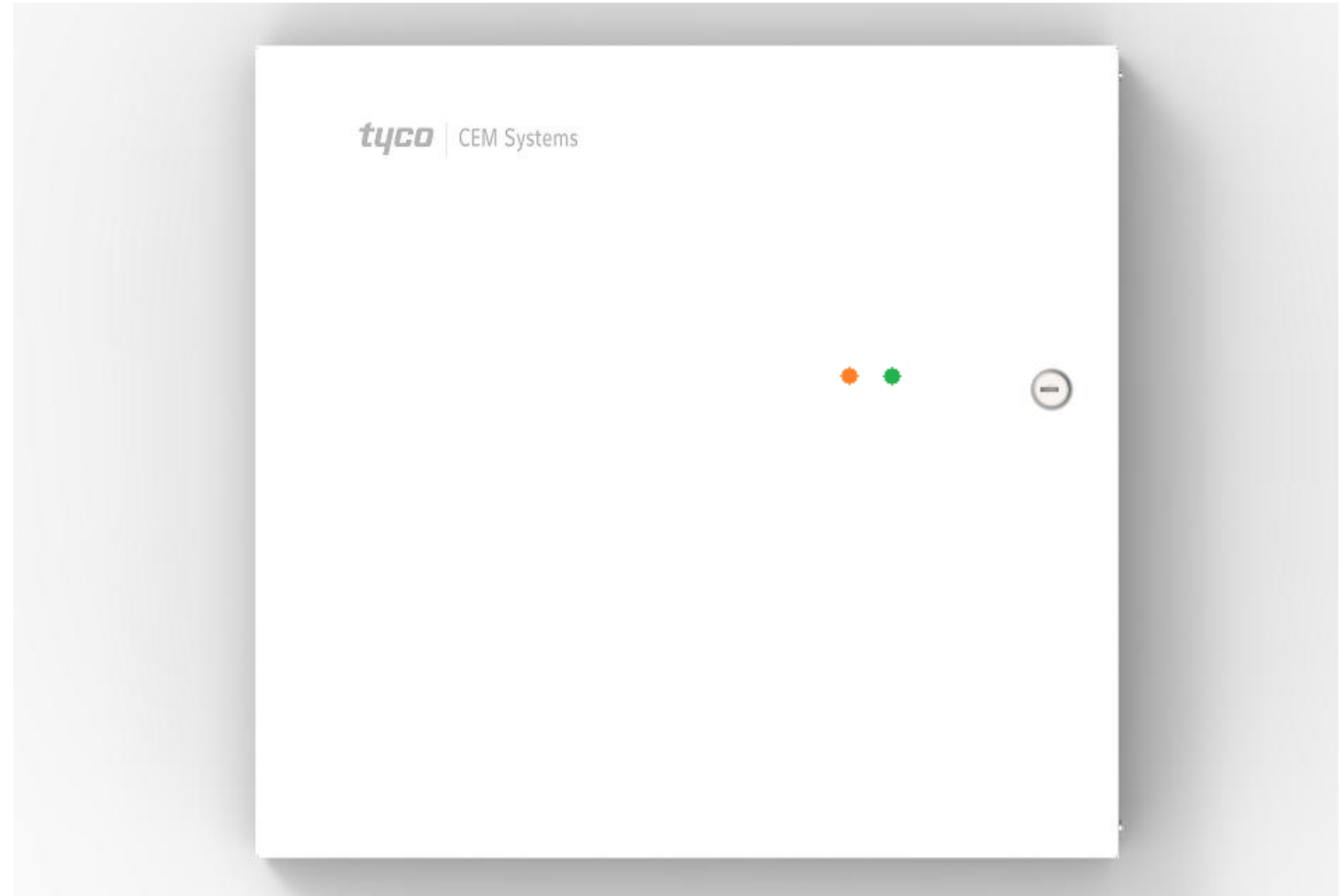


DCM400 Intelligent True Four Door Controller

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■ High Performance hardware

- Dual Core Cortex 32-bit Application processor with
- 8MByte Dual-bank Program Flash, 250MByte Journalled Filesystem

■ Extensive Supervised I/O

- Wet or Dry Lock Power from 12-28VDC, with read-head power stabilised at 12VDC
- Auxiliary Powered outputs for external devices or Interlocking
- Mix and match Wiegand or OSDP Secure doors
- Fire alarm input. Hardwired and Monitored

■ Networking options

- **Dual IPv4/IPv6 stack**
- **Three Way Layer-2 embedded switch with RSTP**

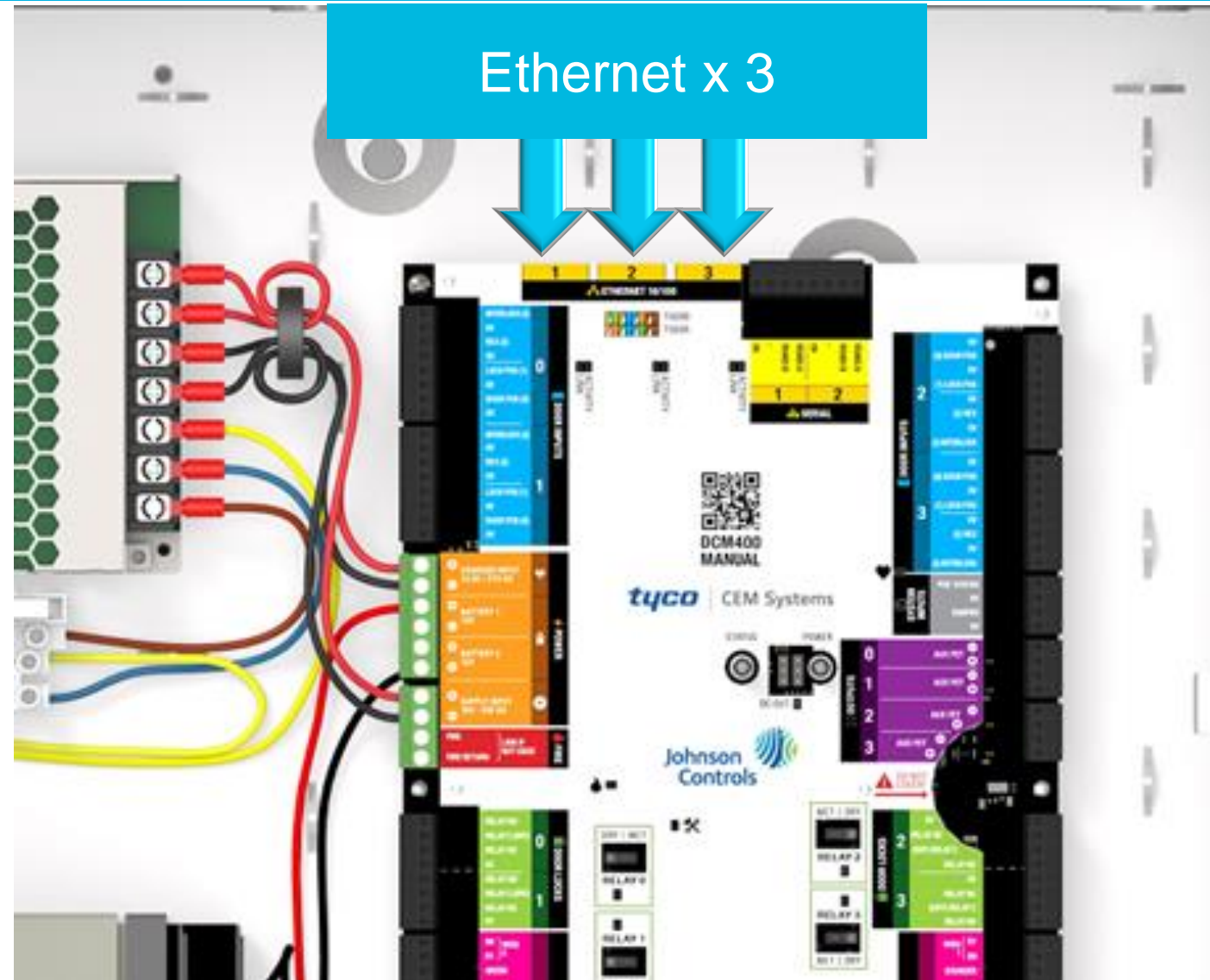
■ Mounting options

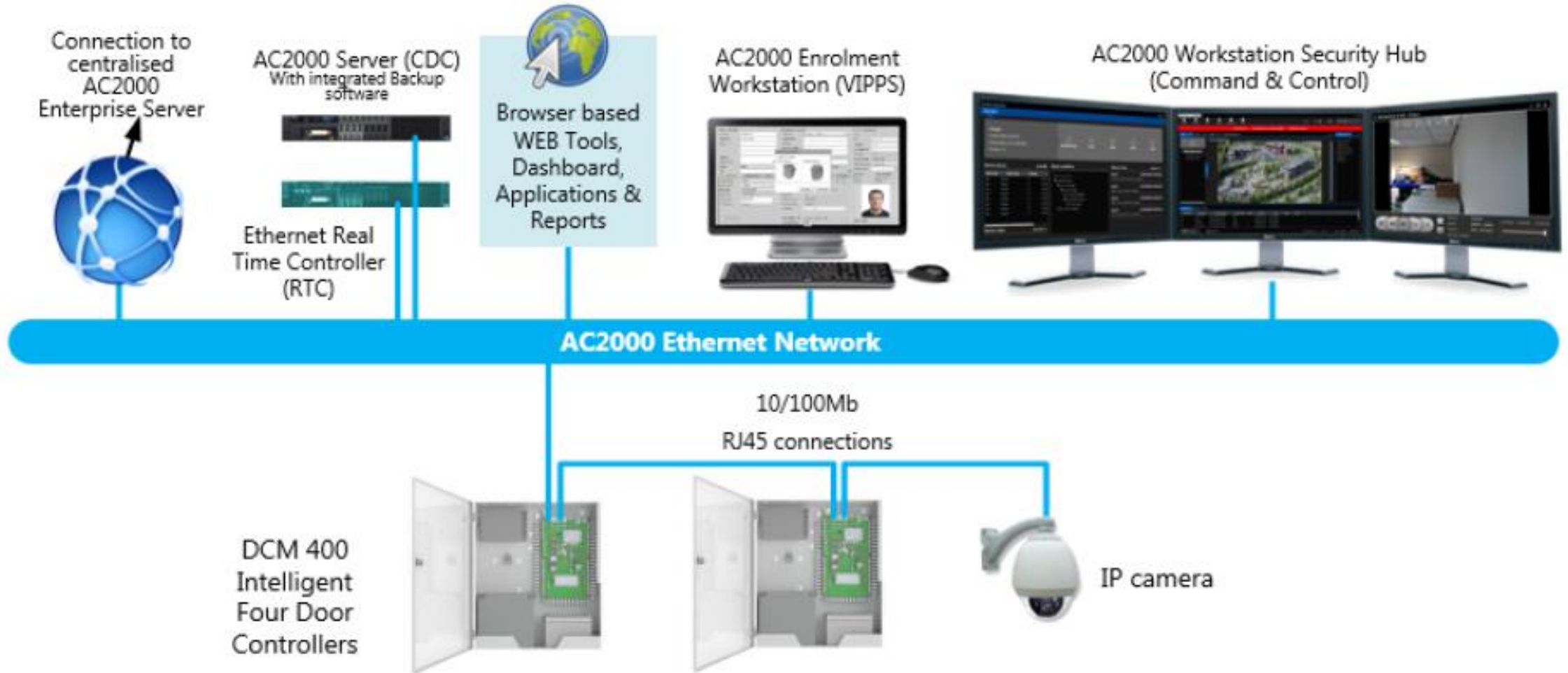
- Wall mounted or Board-only for custom case deployments
- Proof of concept 2U rack-mount.





- More than 4 doors ?
- Ethernet distance limits ?
- Integral Ethernet Switch
- Regenerative 10/100Mb
- Automatic crossover detection
- Layer 2-managed with RSTP
- Broadcast storm protection
- Port 2 & 3 User configured
- Future 802.1X



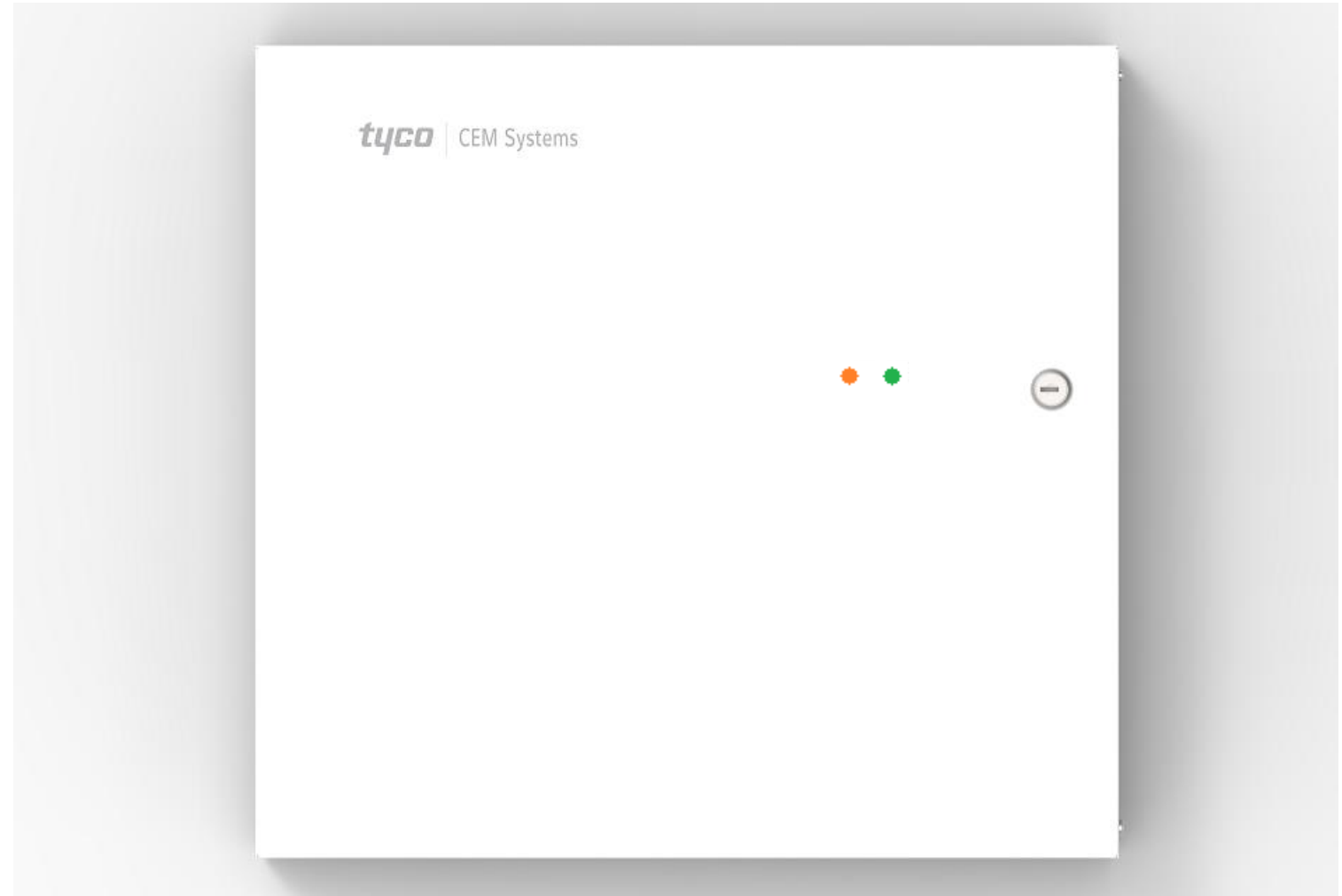


DCM400 Intelligent True Four Door Controller

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- **Installer led design**
- **Power for future needs**
- **Interactive**
- **Compatibility**
- **Flexible**
- **Secure**

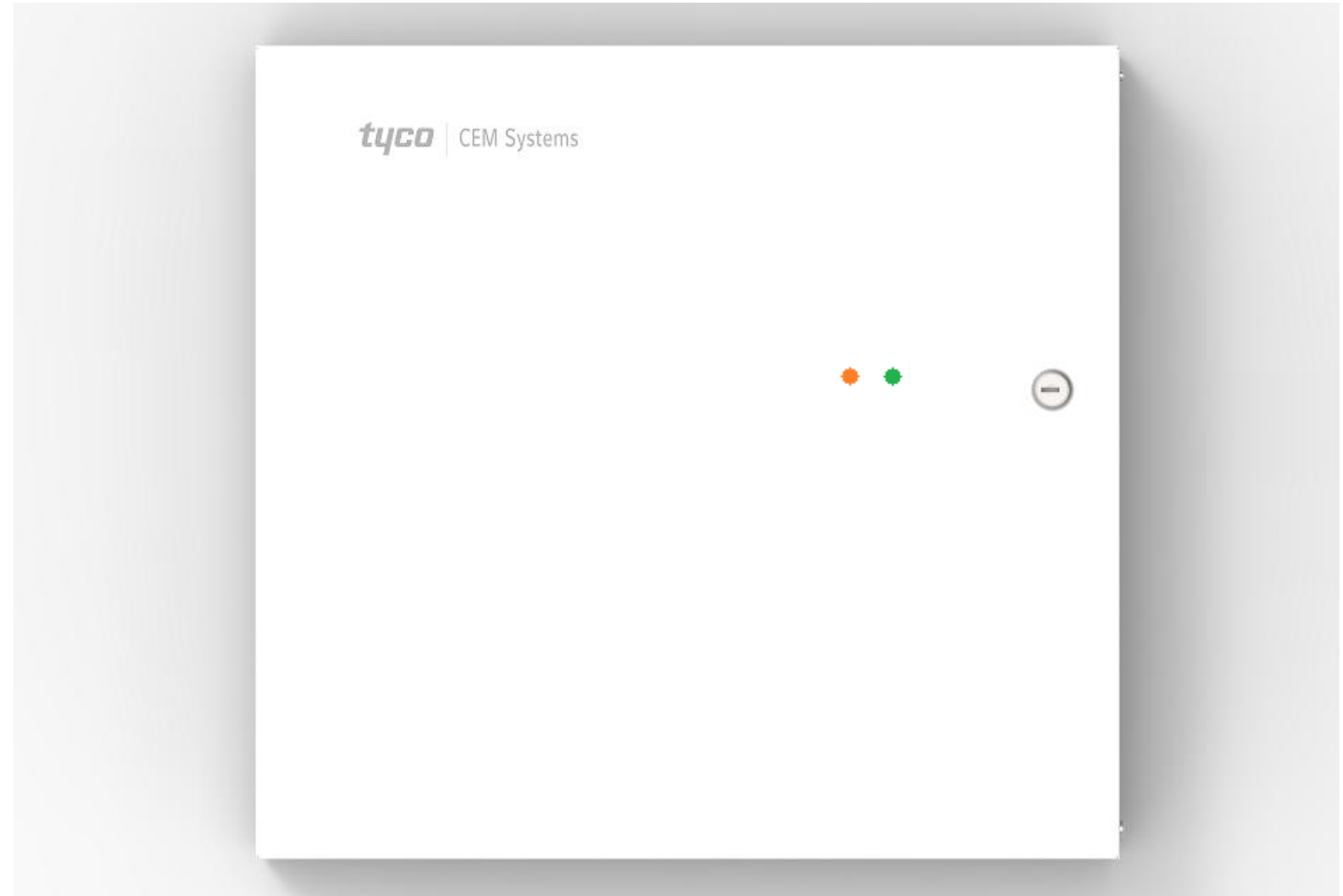


DCM400 Intelligent True Four Door Controller

ENGAGE
TYCO CONFERENCE 2019



- **Installer led design**
- **Power for future needs**
- **Interactive**
- **Compatibility**
- **Flexible**
- **Secure**





- AC2000 v10.2 or later Required
 - RTC & Devices application changes
 - DCM400 identified by Unique ID
- New TLS Protocol
 - Transport Layer Security v1.2 for data integrity and communication privacy
 - ECDH to authenticate RTC and DCM400. AES-GCM Authenticated encryption
- Crypto Authentication processor
 - Accelerates authentication for host and web communications
 - FIPS SP800-56A ECDH,
 - NIST P256 Elliptic Curve support
 - Hardware based Security for Digital Certificates
- Extensive self-protection features
 - Overcurrent, overvoltage, under-voltage
 - Reverse polarity, Resettable fuses





Create a DCM400 controller

Start Devices application

Select

“+ Add” from menu-bar
and
‘Add DCM400 controller’

Select an RTC

Enter

Description
Unique MAC address

The screenshot shows the 'Devices' application interface. The top navigation bar includes 'ADD', 'DELETE', 'SEARCH', 'BATCH', 'TEMPLATES', 'DEVICE REPORT', and 'DEVICE LICENSES'. A dropdown menu is open under 'ADD', listing options: 'Add Controller', 'Add 9032', 'Add 9064', 'Add Sallis Router', 'Add Aperio Hub', 'Add DCM400 Controller' (highlighted), 'Add SmartIntego Gateway Node', and 'Add Device'. The main content area displays the configuration for a controller named 'RTC00 ON CDC'. The 'Location' field is set to 'RTC00 ON CDC'. The 'Properties' section shows 'Device Address' as '00', 'Start Group' as '0', 'Active Groups' as '16', and 'Maximum Groups' as '16'. Below this is a table with columns 'Address', 'Location', 'Type', and 'Mode', and a 'Total Count' of 0. The bottom status bar shows 'AC2000' and 'User : cem Last Login : 19/03/2019 10:38'.



Create Doors :

Default is 4

Auto-generated

Enter Door Descriptions

Select "Save"

The screenshot shows the 'Add DCM400 Controller' configuration screen. The 'Create Doors' dropdown is set to 4. The table below shows the auto-generated door configurations:

Device Address	Physical Address	Device Location	Configuration Mode
00000	0	DCM 400 Hallway Door A	EDCM400 M/S
00010	1	DCM 400 Hallway Door B	EDCM400 M/S
00020	2	Side Exit	EDCM400 M/S
00030	3	Side Exit B	EDCM400 M/S



Configure :

Input alarms

Door settings

Access Permissions

Smart Interlocking

The screenshot displays the 'Devices' configuration page in a web browser. The interface is dark-themed and includes a top navigation bar with icons for ADD, DELETE, SEARCH, BATCH, TEMPLATES, DEVICE REPORT, and DEVICE LICENSES. A left sidebar shows a tree view of the device hierarchy under 'AC2000', with '00030 - HALLWAY_ENTRANCE' selected. The main content area is divided into 'Settings' and 'Extended properties' sections. The 'Settings' section includes fields for Device Number (00030), Device Location (HALLWAY_ENTRANCE), Device Family (DCM400), Device Type (DCM400 M/S), and Configuration Mode (EDCM400 M/S). The 'Extended properties' section includes DCM400 Controller (DCM 400 Hallway) and Physical Address (3). A 'DCM400 Controller' section shows Controller (DCM 400 Hallway) and MAC Address (00:30:46:FF:FF:F0). A table at the bottom lists controller devices with columns for Address, Location, and Physical Address.

Address	Location	Physical Address
00000	DCM 400 Hallway Door A	0
00010	DCM 400 Hallway Door B	1
00020	Side Exit	2
* 00030	HALLWAY_ENTRANCE	3



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Thank You

Questions



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Biometrics Update

Albert Janicki



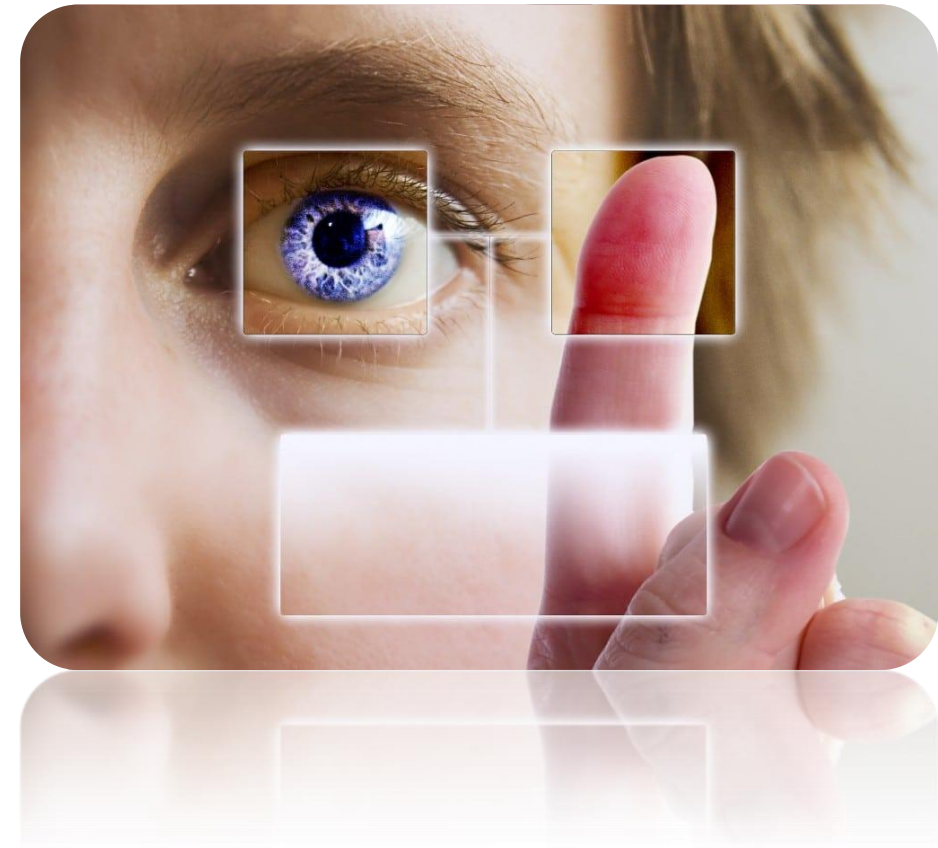
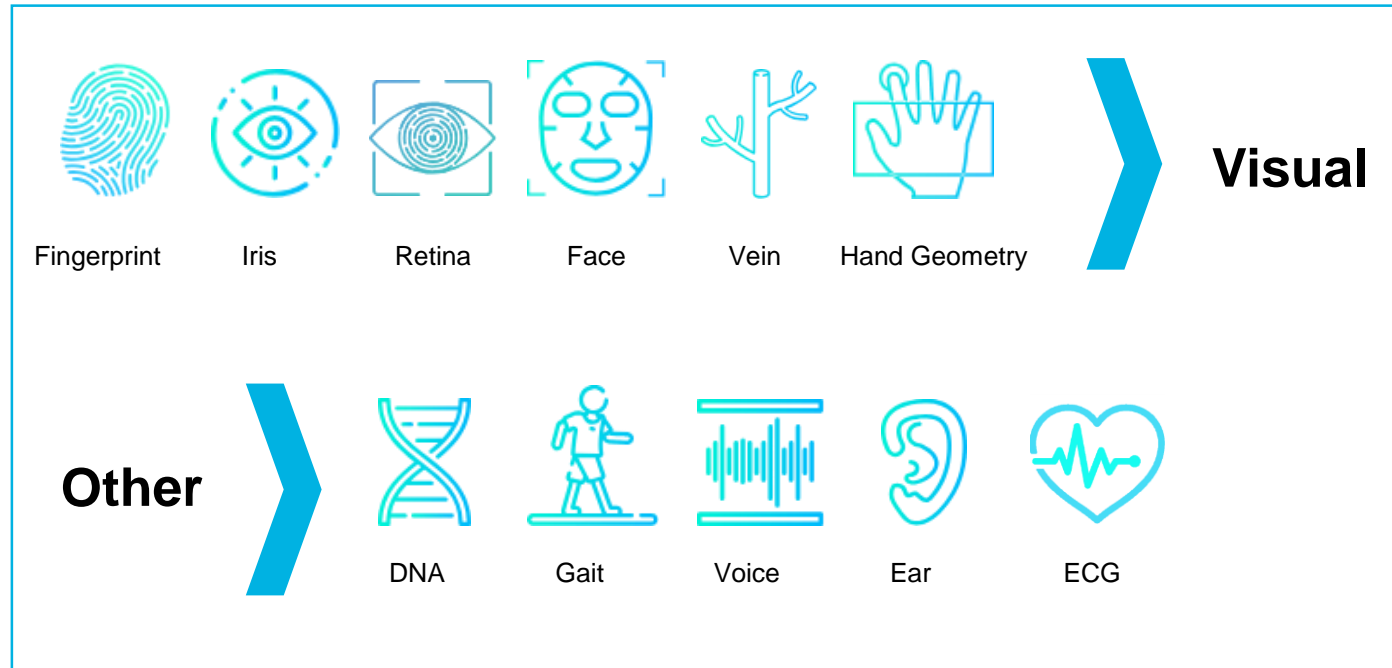
Johnson Controls 



What is biometrics?



■ BIOMETRICS - means body measurement



Interesting facts:

- Earliest mention of biometric identification present from ancient Babylon and China BC
- Modern biometric identification technology development started in 1960's in criminology



Healthcare



- Identify hospital staff
- Restrict access to drugs
- Infant protection
- Access to sensitive records
- Medical bills

Aviation



- Biometric passports
- Identify terrorists
- Verify passenger's ID
- Access restricted zones
- Use high-tech equipment

Education



- Classroom attendance
- Student safety
- Access to restricted facilities
- Cashless vending
- Library access

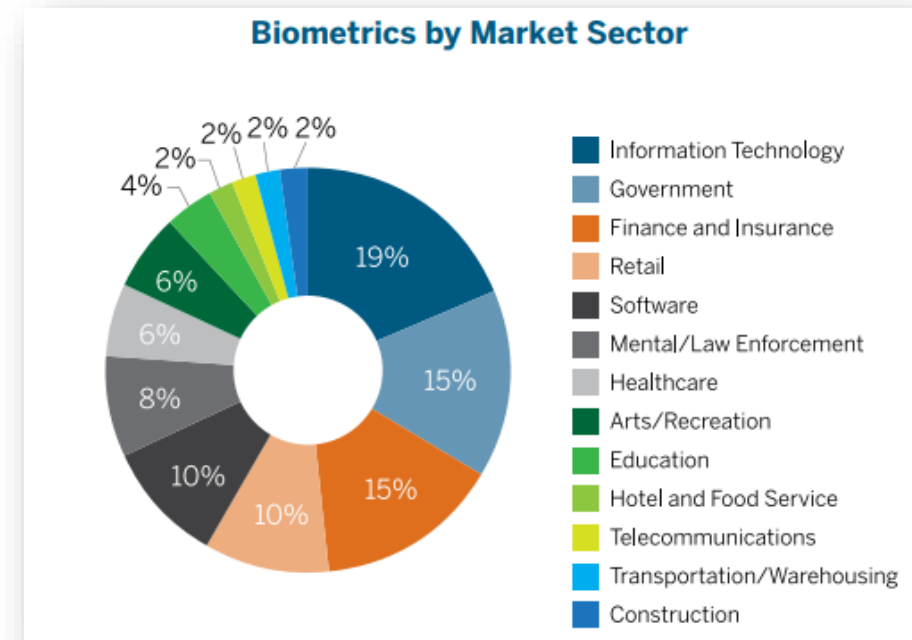
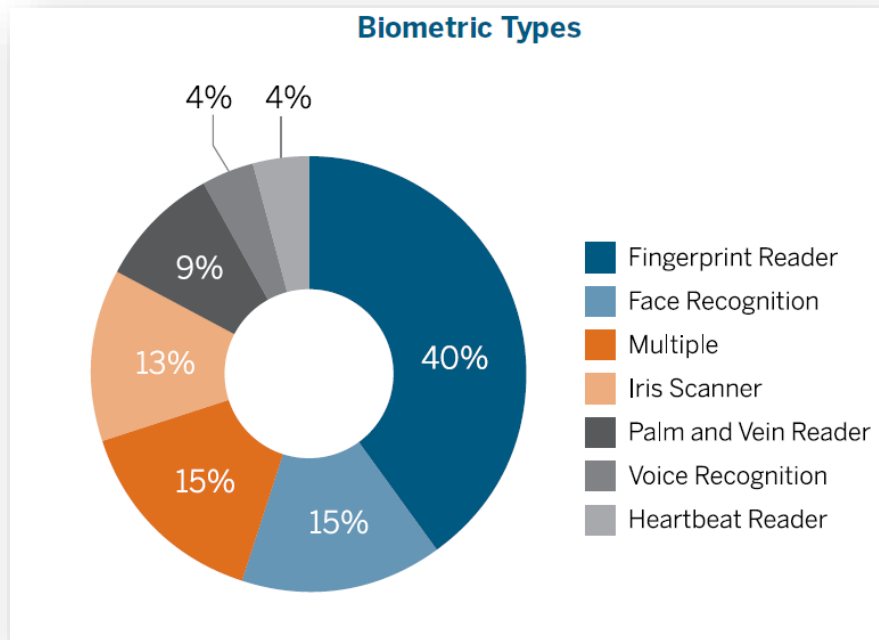


Art. 9 GDPR Processing of special categories of personal data

1. Processing of personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, **biometric data** for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation shall be prohibited.



- **Fingerprint** is still the most widely used biometric
- Biometric evolution includes trials of fingerprint-embedded smartcards
- According to research, the biometrics market will reach **\$30 billion by 2021**





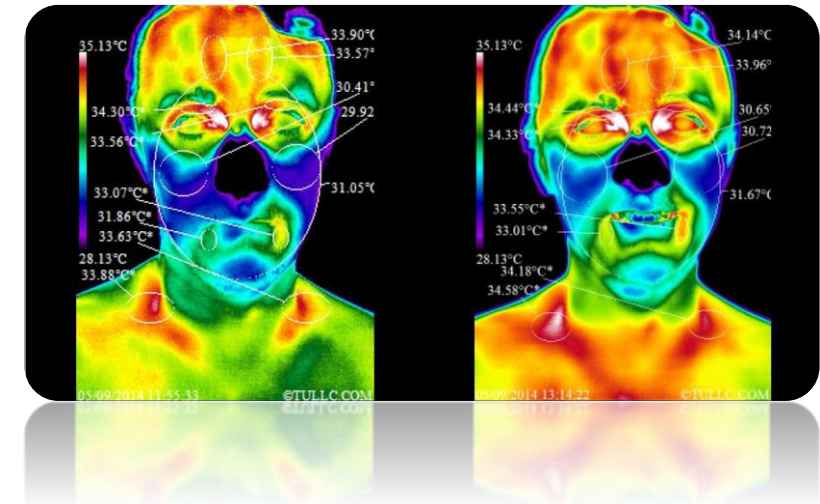
Fingerprint bank card



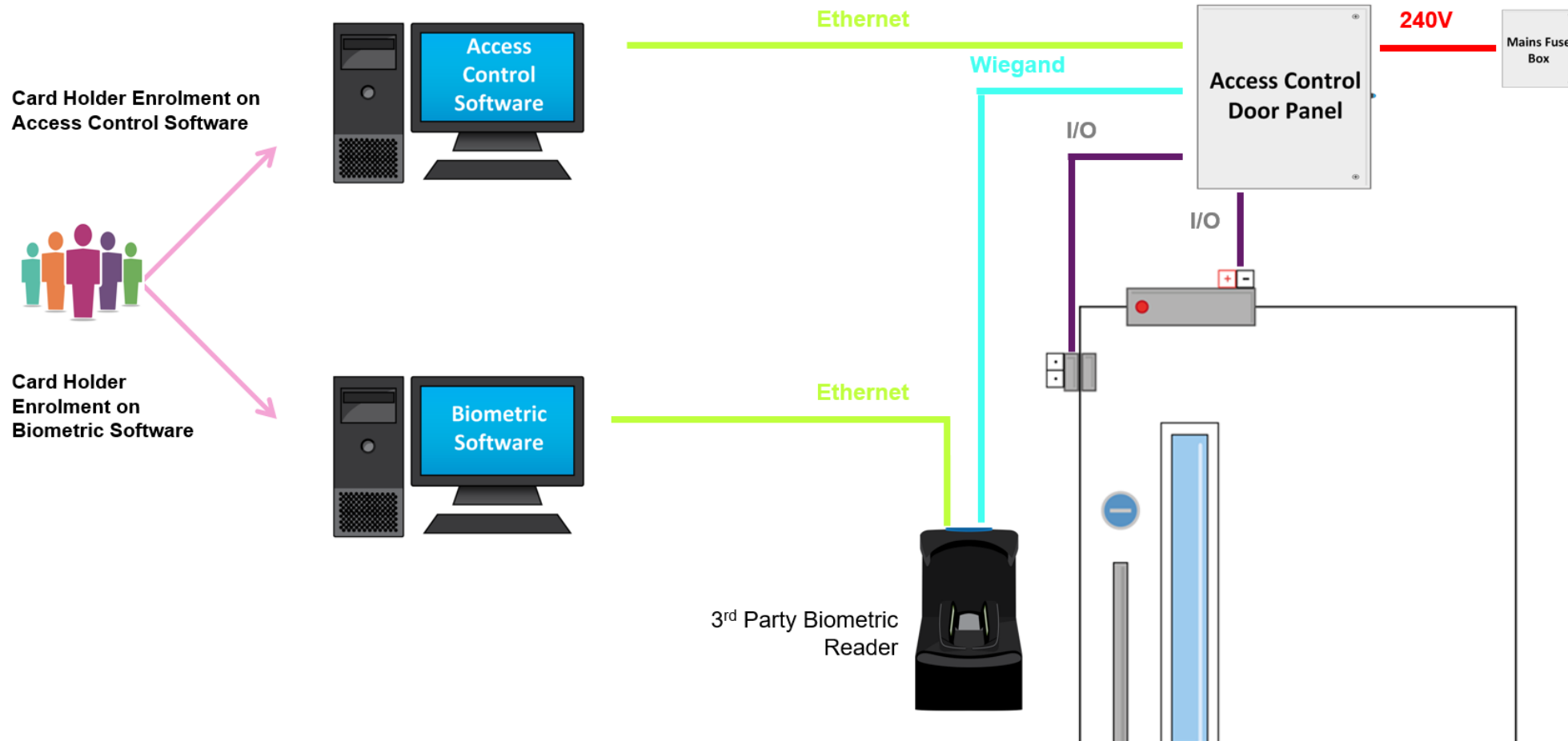
Biometric connected car



Facial thermography



Typical biometric door



CEM biometric door

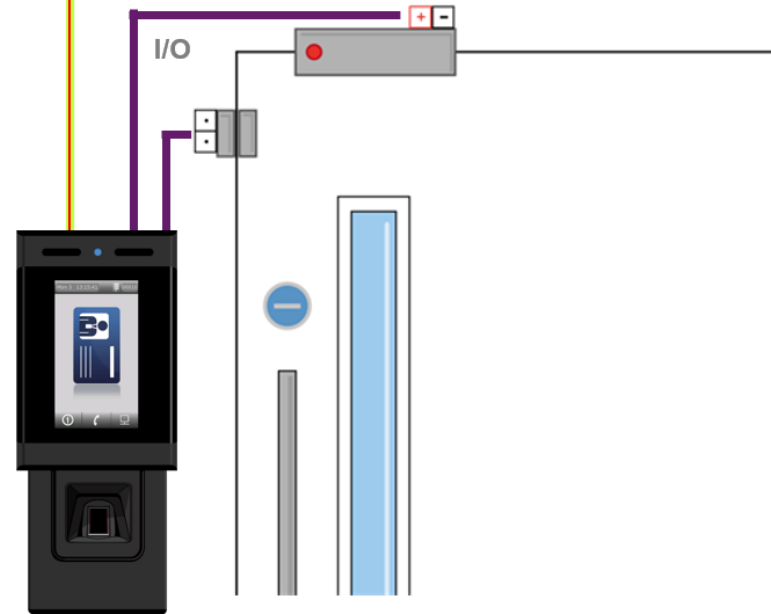


Card Holder Enrolment on
Access Control Software



Power Over
Ethernet

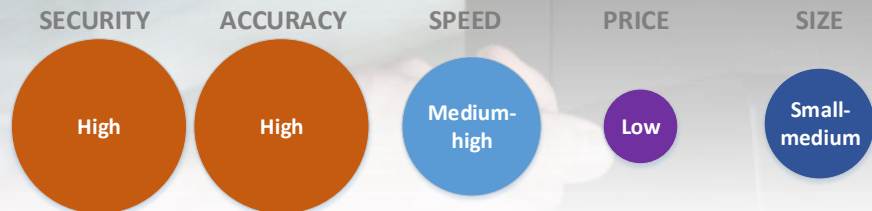
Emerald Biometric
Reader





- Intelligence at the edge
- Controller, card reader, biometric, keypad, intercom and more... in one!
- 1:1 fingerprint matching = speed
- IP65 – suitable for outdoor environment
- IK06 – impact resistant
- ... and so much more!

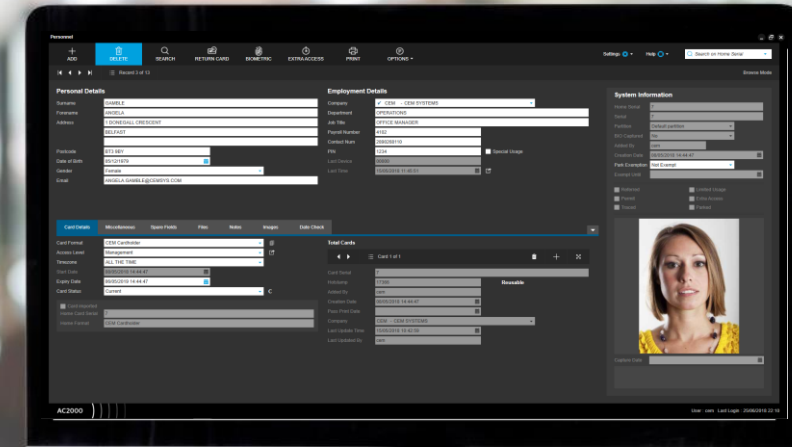
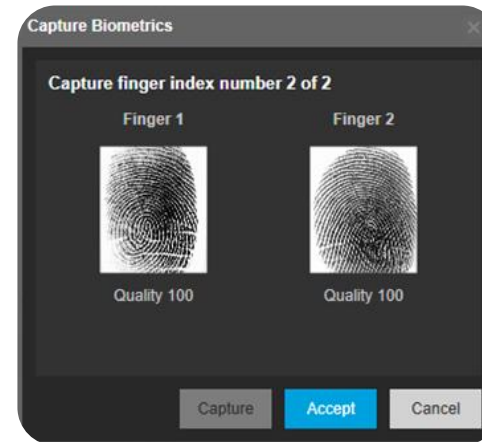
... beyond security



CEM biometric – emerald enrolment



- Enrol using CEM dedicated USB fingerprint reader
- Template stored on AC2000 server with personnel details
- Single integrated solution – no need for separate 3rd party biometric system



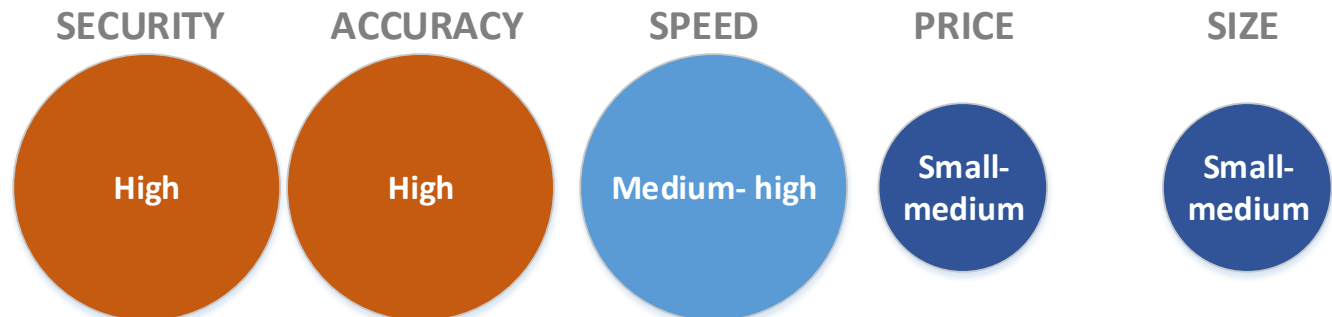
... one process for biometric enrolment and access control





MorphoAccess SIGMA Series

- Versatile fingerprint terminals
- Fake finger detection
- Duress finger
- Temperature: -20°C to +60°C
- IP65





MorphoAccess Finger VP

- Hybrid finger **vein and fingerprint** technology
- Resistance to spoofing
- Very high accuracy
- Temperature: -10°C to +50°C
- IP65



SECURITY



ACCURACY



SPEED



PRICE



SIZE





Morpho 3D Face

- Accurate even in poor lighting conditions
- Hands-free access control
- Secure facial recognition
- Temperature: +5°C to +45°C



SECURITY

Medium-high

ACCURACY

Medium-high

SPEED

Medium-high

PRICE

Low

SIZE

Small-medium



MorphoWave Series

- Contactless 3D fingerprint
- High-speed acquisition
- Matches 4 fingers
- Temperature: -10°C to +55°C
- IP65

SECURITY

High

ACCURACY

High

SPEED

High

PRICE

High

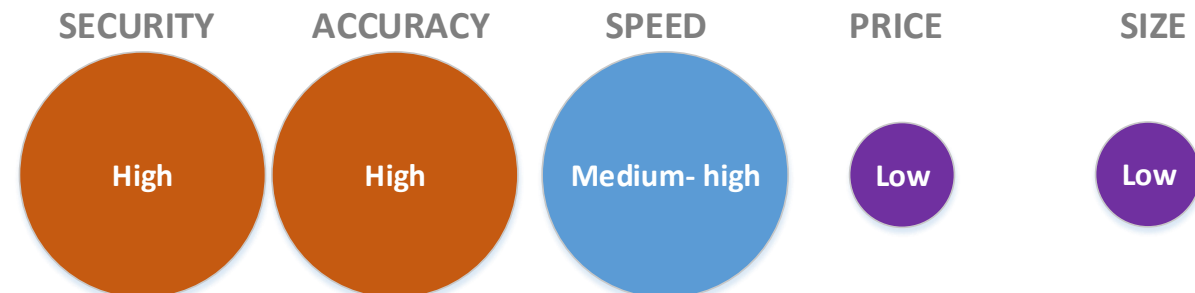
SIZE

High



STid Architect Series

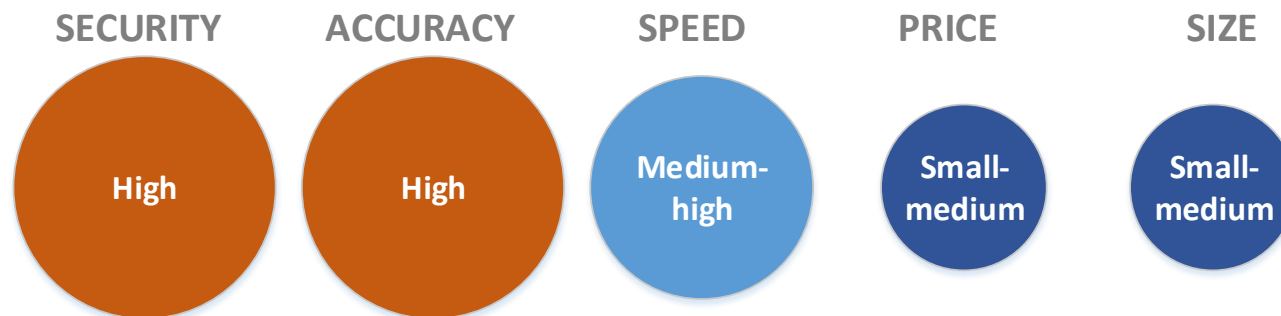
- Innovative modular design
- High security + vandal proof
- Scalable and upgradeable
- Temperature: -20°C to +70°C
- IP65





HID iClass RKL40

- Industry's proven HID reader with added biometric
- Built-in fingerprint enrolment capability
- iClass & SEOS
- Temperature: -55°C to +85°C
- IP55





Fujitsu PalmSecure PSN900

- Touchless **vein pattern** technology
- Multi-factor authentication
- Can be used as either 1:1 or 1:N matching
- Temperature: -10°C to +50°C

SECURITY



ACCURACY



SPEED



PRICE



SIZE





IrisID iCam7 Series

- Contactless and reliable **iris reader**
- Embedded high-resolution camera
- Reader activates automatically
- Temperature: 0°C to +45°C



SECURITY

High

ACCURACY

High

SPEED

Low

PRICE

Medium-high

SIZE

High



Allegion HandKey II

- Unique **hand-geometry** recognition
- Encrypted biometric template
- Low sensitivity to dirt or dust
- Temperature: 0°C to +45°C

SECURITY



ACCURACY



SPEED



PRICE



SIZE





- **What type of biometric?**
- Level of security
- Integration
- Speed
- Price
- Size





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Video Overview

Allen Houston



Johnson Controls 

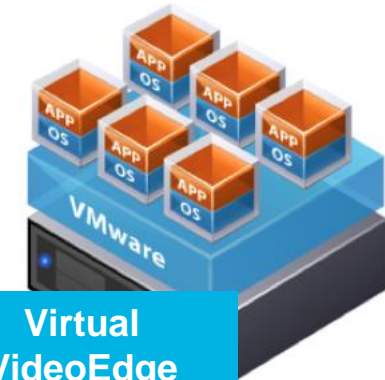




**Bulk Upgrades
Illustra and
VideoEdge
(5.3)**




**Transcoding
Appliance
(5.3)**



**Virtual
VideoEdge
(5.4)**

Enterprise



**Scheduled
System Health
Report
(5.3)**

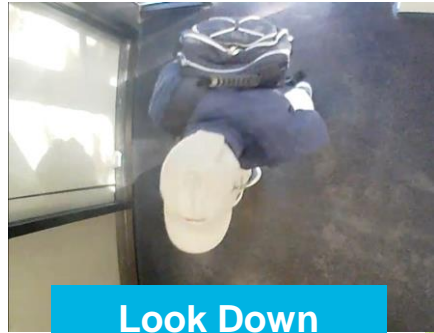
**R740 w/
1000Mbit
throughput
(5.4)**



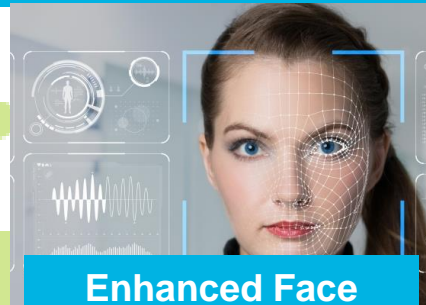
**Enterprise Clip
Management
(5.4)**



**Second
Recorded
Stream
(5.4)**



Look Down
People Counting
(5.3)



Enhanced Face
Recognition Engine
(5.4)



Analytics
Appliance
(5.3)

Automation



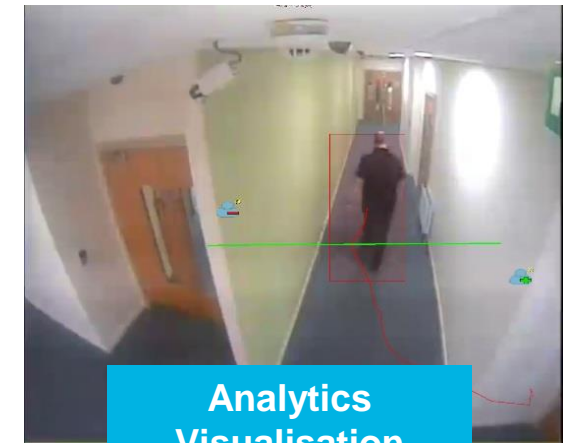
Analytics
Dashboard
(5.3)



External IO
Module
(5.3)



Centralised Face
Management
(5.4)



Analytics
Visualisation
(5.3)



Enhanced Security Install for victor and VE (5.3)



Clip Face Redaction (5.3)

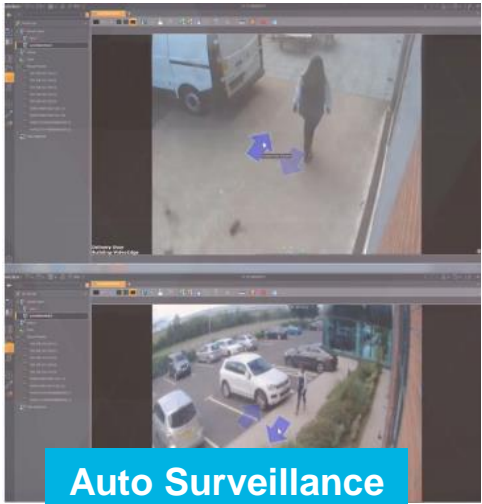


Centralised Camera Password Update (5.3)



Platform Hardening (5.3/5.4)

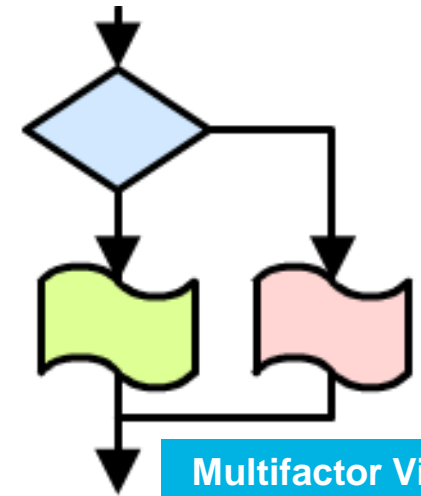
Victor VideoEdge New Features



Auto Surveillance Tracking (5.3)

Push Notifications For VictorGO (5.4)

On Screen Stream Diagnostics (5.4)



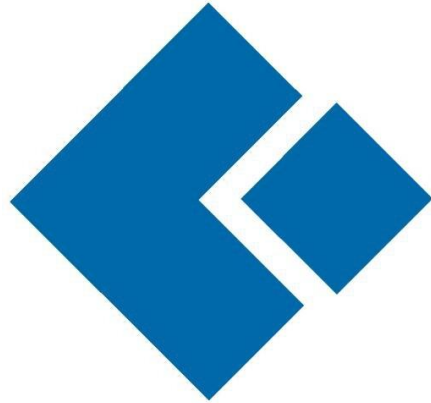
Multifactor Video Search (5.3/5.4)

Commissioning Report (5.3)

VE Optimised Device Commissioning (5.4)

Victor HW Bundle (5.3)

Usability



edesiX





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Tyco Shorrange Perimeter Radar

Eric Hampel, Magos



Johnson Controls





■ Our focus

- High end radar technology
- User Experience from customer feedback
- VMS & PTZ Integration
- Quick and agile

■ Clients

- Installation in over 30 countries

■ 10 years experience

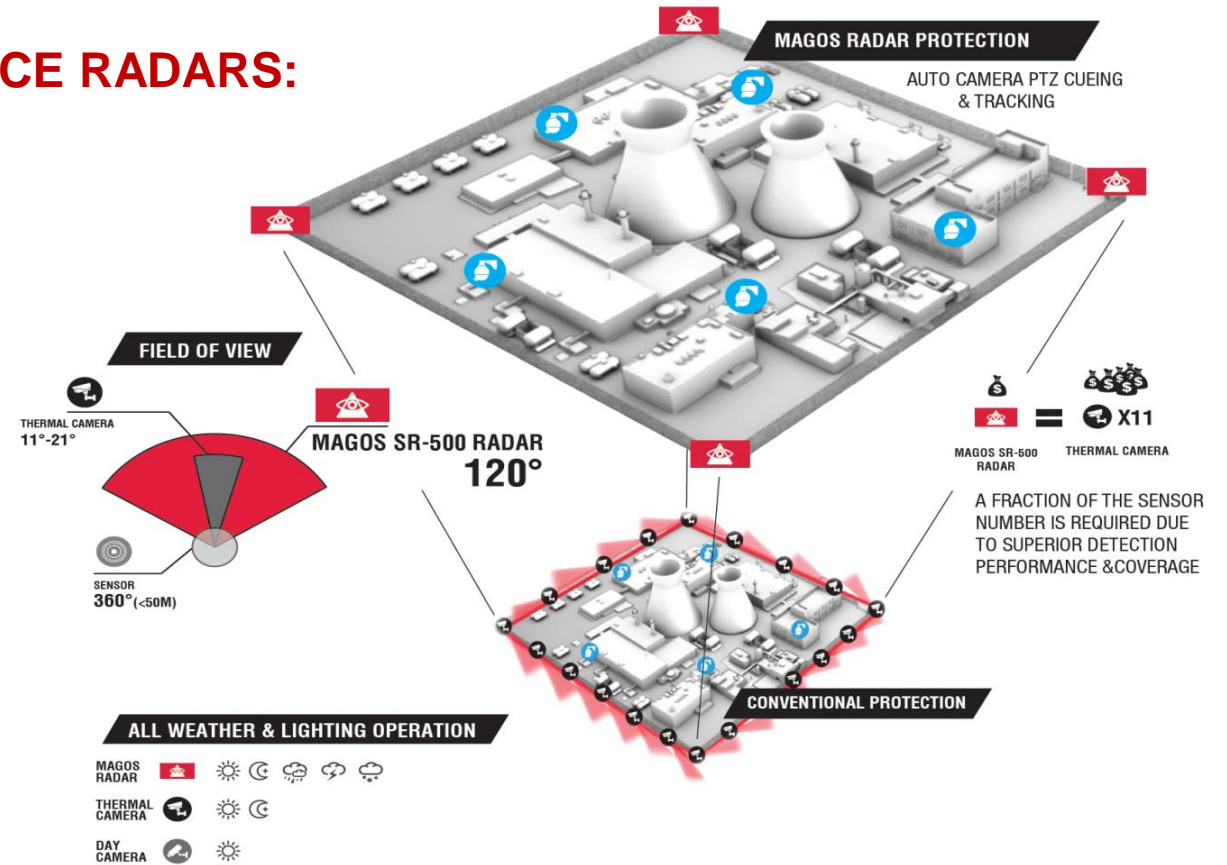
- 2008 - Established by 3 partners
- 2010 – 2015 – developed radars for the leading defense companies in Israel
- 2015 - technology was declassified followed by global sales
- 2018, 1st round funds:
from Afcon (Israel) and Johnson Controls International.





HIGH PERFORMANCE RADARS:

- All condition best in class detection
- Auto PTZ cuing
- Easily integrated with VMS
- Wide area coverage
- Cost effective
- Low power consumption
- Easy to install and maintain





Nuclear
Power Stations



Water
Treatment Plants



Oil Refineries



Substations



Virtual Fence
Radar System



Airports



Seaports



Railway Yard



Parking Lots



Solar Farms



Farms



Logistical Centres



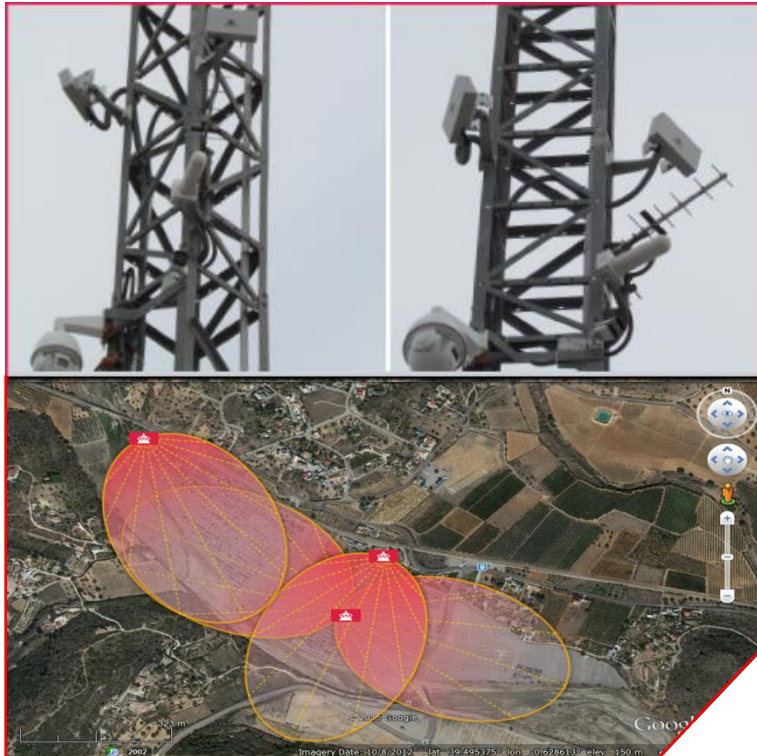
Data Centers



Prisons



Construction
Sites



THE NEED: AS PROPERTY CENTERS, AUTO DEALERSHIPS AND DISTRIBUTION CENTERS FACE A CHALLENGE OF BEING A TARGET TO THEFTS AND VANDALISM

SITE PERIMETER: 2750 m

OUR SOLUTION 

4 SR500 radar cover the entire car lot providing full proof perimeter protection replacing **40 fixed VMD cameras**.

3 High speed Laser illumination HD cameras are automatically cued to the radars detection.

Video



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Physical and Cyber Threats

David McCord



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- More common than you think!
- Websites and forums dedicated to hacking
- Even featured in mainstream news



EXPRESS Home of the Daily and Sunday Express

HOME NEWS SHOWBIZ & TV SPORT COMMENT FINANCE TR

CRUISE ACTIVITY HOLIDAYS BEACH HOLIDAYS SHORT & CITY BREAKS TRAVEL NEWS

Home > Travel > Travel News > Hotel room WARNING: New key card flaw could allow people to break in within seconds

Hotel room WARNING: New key card flaw could allow people to break in within seconds

HOTEL ROOM doors are usually opened by using a key card. Yet a new investigation has revealed million of hotel doors have been left open to a flaw that could see them easily broken into.

By **KARA GODFREY**
PUBLISHED: 15:06, Wed, Apr 25, 2018 | UPDATED: 17:42, Wed, Apr 25, 2018



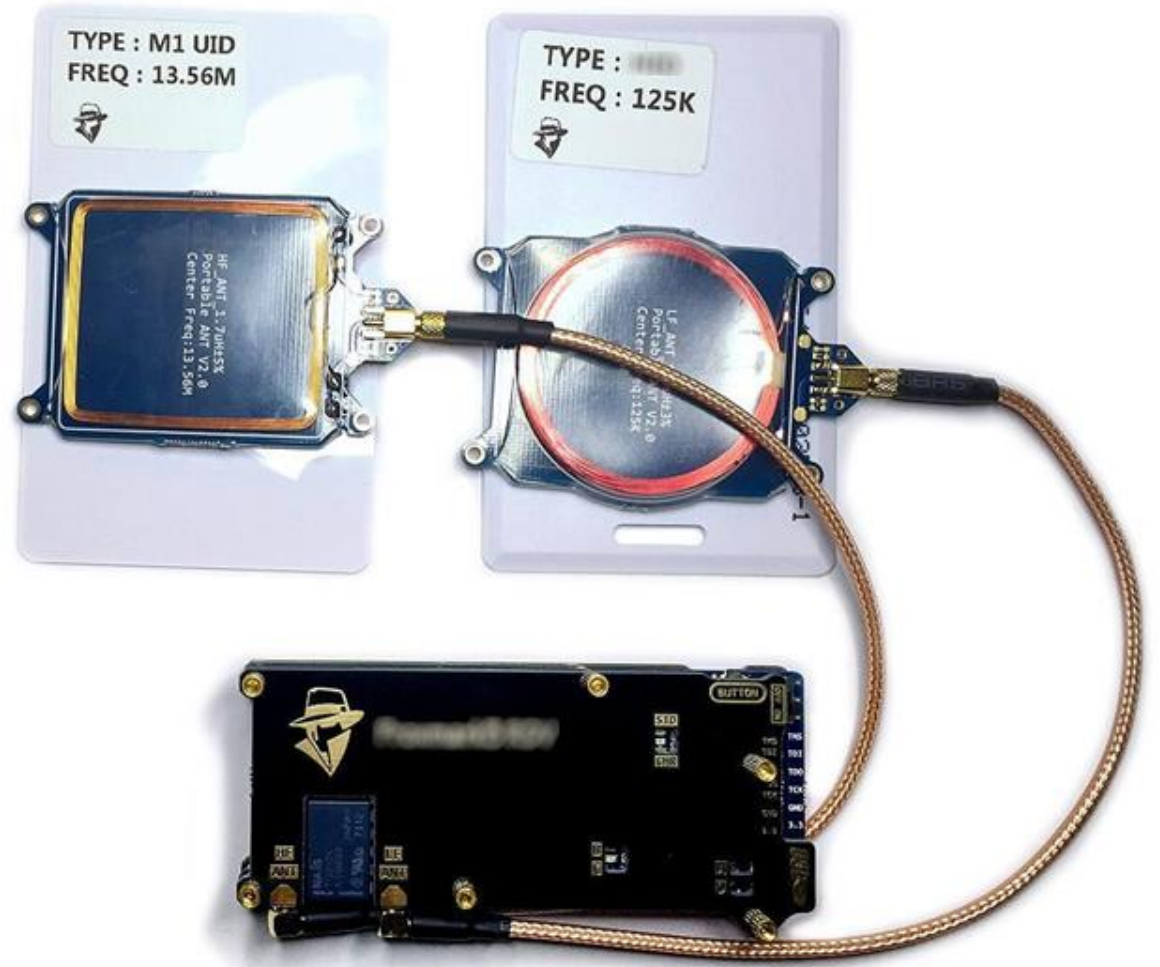
- Card CSN copied in less than 2 seconds
- Do not need the card to clone it
- Completely “mobile” solution
- Up to 2 cards can be stored in memory
- Vulnerable Technologies:
 - Mifare
 - Prox
 - Legacy iClass



Card Cloning - Cloning



- Card CSN cloned in less than 2 minutes
- Card can be duplicated with no limitations
- Windows based command lines and GUIs
- Vulnerable Technologies:
 - Mifare
 - Prox



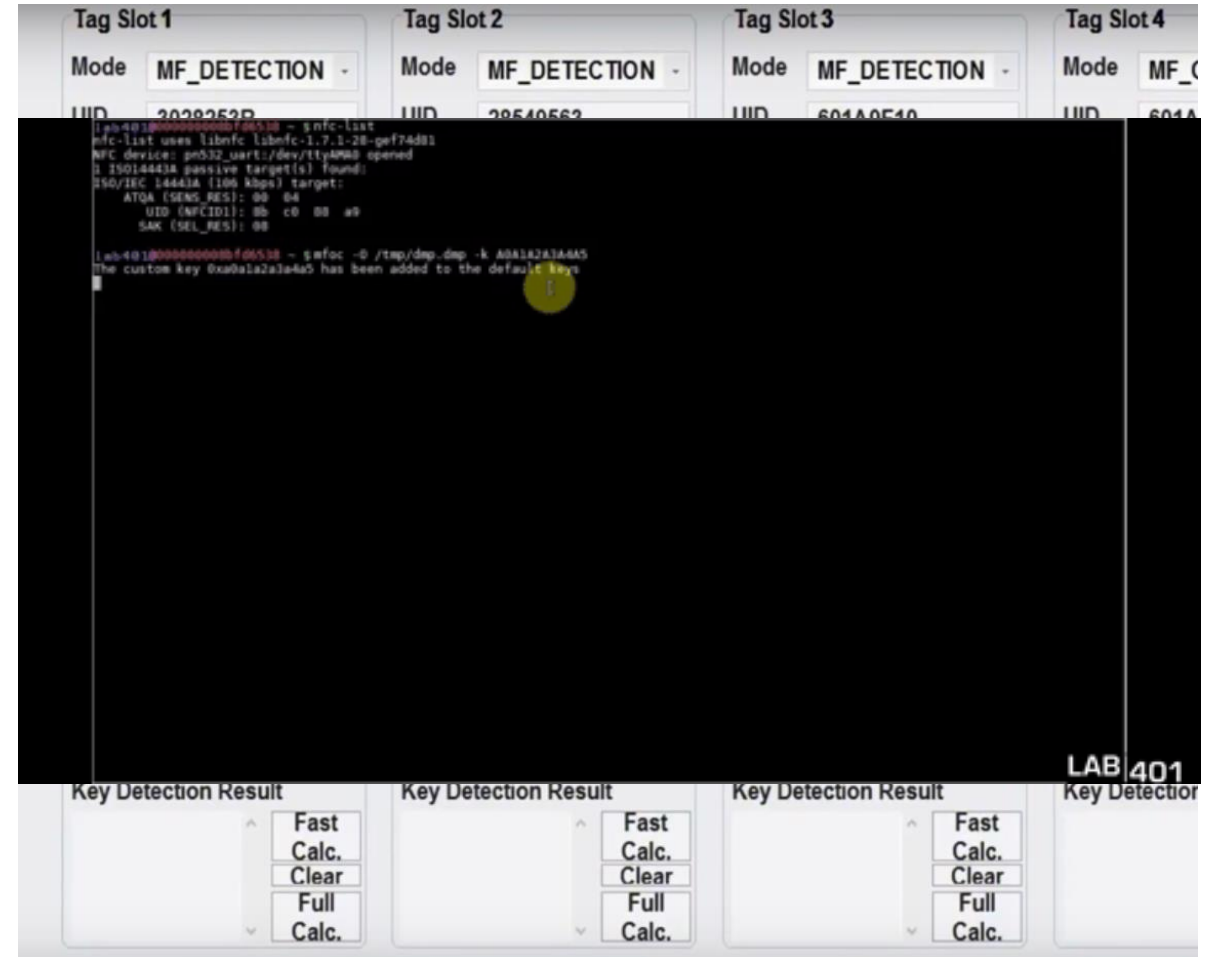


- Mifare Classic cards
- The Mifare hack compromised all cards
- Commuters were able to add credit to cards
- Switched to Mifare DESFire
- Using DESFire application areas



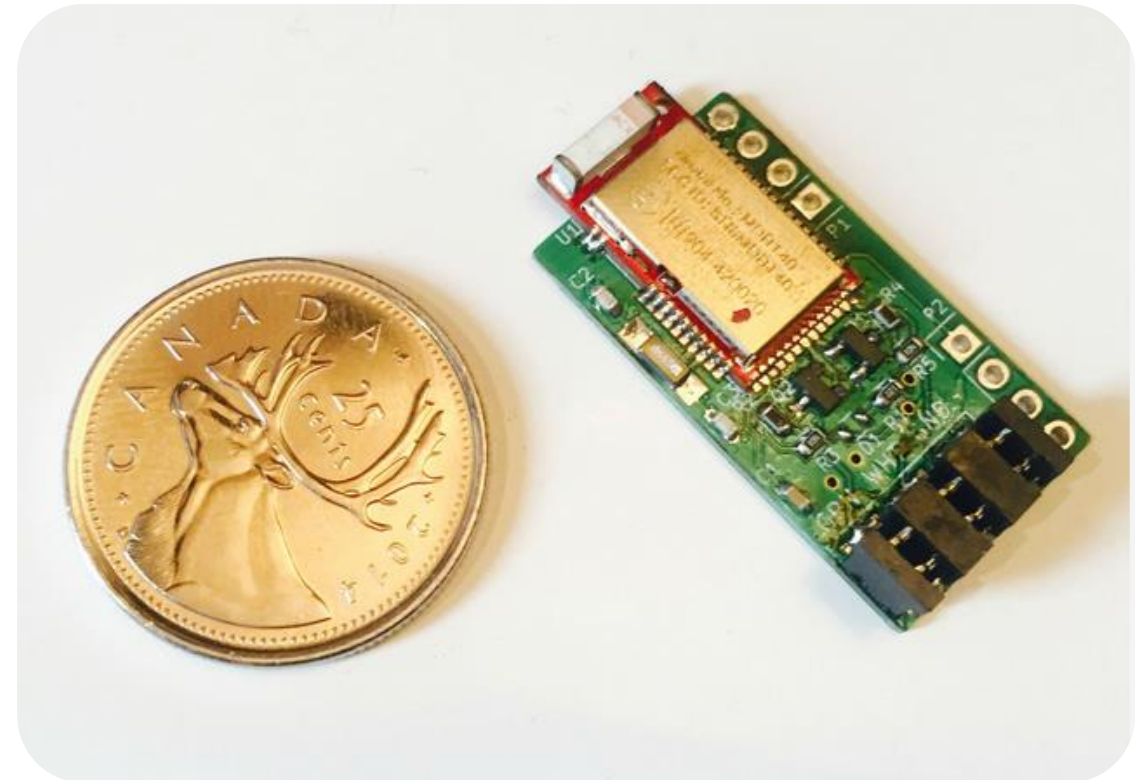


- Mifare sector was considered secure
- Master Mifare key was compromised
- Key used to decrypted each “secure” sector
- All 16 Mifare sectors copied in less than 1 min
- Recently in the news with Hotel lock hack





- Not only cards are vulnerable
- Wiegand signal to readers unencrypted
- Sent via Bluetooth to a phone
- Card number can be replayed remotely





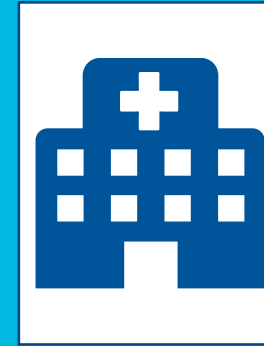
Compliance Pressure is Mounting



NIST SP
800-171
& DCP
compliance



CAA
Compliance



DPA & ICO



GDPR
Compliance



Critical
National
Infrastructure



CFATS
approval
program
released



High Assurance Solution



Establish identities via
IDMS or LDAP import



Secure login, digital
signature & encryption



Secure credentials
Crescendo Cards



Trusted certificates



PKI credential validation



Fargo Printers for
Card printing



Physical Access readers
Protect facilities

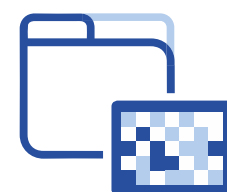


OMNIKEY Readers
Connect cards to PC

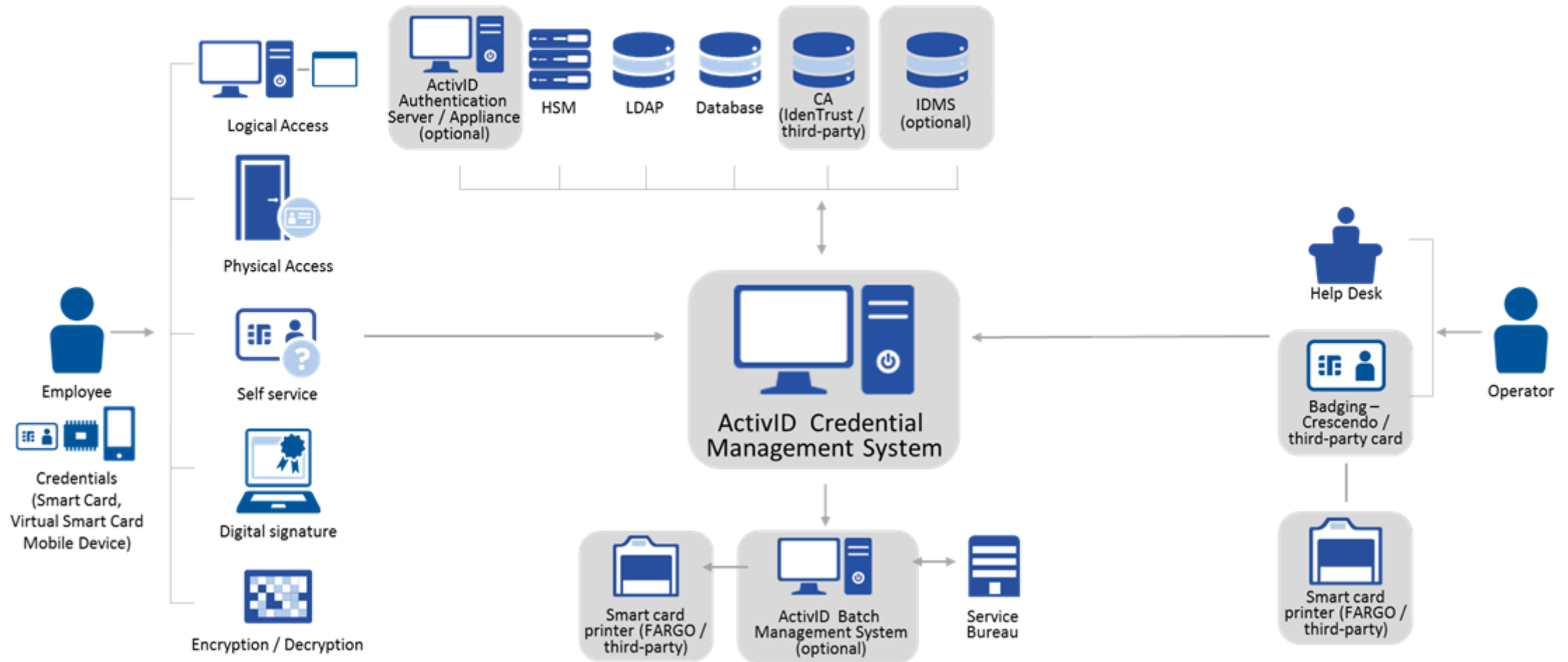
CEM Logical Access



- Secure access to computers (PKI logon to Windows)
- Secure access to VPN networks
- Secure access to cloud applications
- Secure emails and documents
- Physical access (128-bit AES encrypted DESFire EV2)

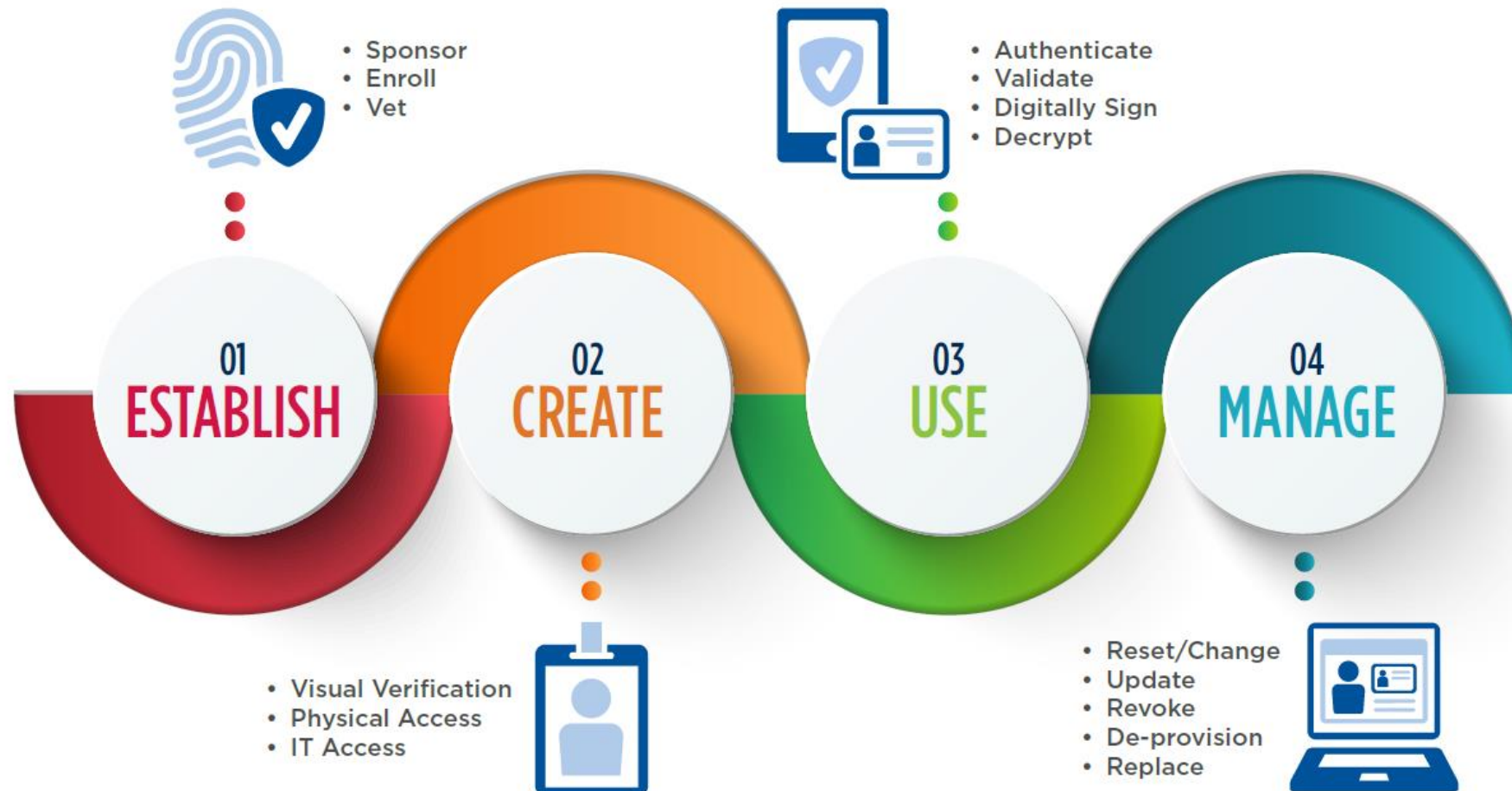


Logical Access – How it works





IDENTITY & CREDENTIAL LIFECYCLE





- IT Teams are in complete control of keys
- No Master key controlled by 3rd party
- No need to replace every few years
- Credentials can be recycled
- Credentials can be revoked remotely





Cyber solutions from a trusted partner





Does your organisation have cyber security teams and/or processes in place?

040

Both



Process



Neither



Team



Join at
slido.com
#ENGAGE19



Cyber Solutions to address concerns where disruption is not an option...

the safety of

- Children...
- Travelers...
- Employees...
- Customers...



the protection of

- Privacy...
- Sensitive information...
- Trade secrets...

the continuity of business

- Workplace efficiency...
- Critical operations...



the compliance with policies and regulations....

- Government...
- Healthcare...
- Banking and Finance...
- Privacy Laws...

the retention of customers

- Maintaining brand reputation ...
- Assuring quality...
- Meeting service levels...

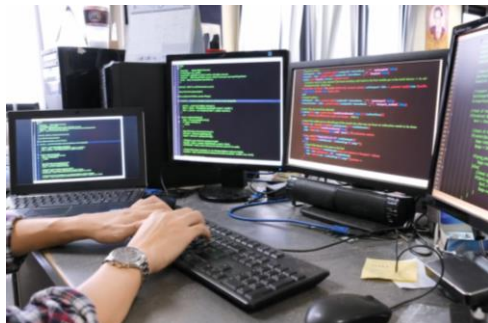




Holistic Methodology

Governed by Policies and Supported by a Dedicated Global Product Security Team...

Secure development



- Designed to standards by experts

Deployment services



- Assisted compliance

Rapid Response



- PRISRT managed formal response



Disruption is Not an Option



A Higher Level Commitment



Expert Driven Designs



Lifecycle Management



Shared Responsibility



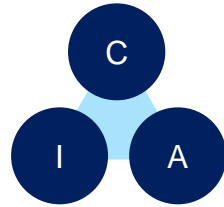
Traditional IT concerns meet unique OT requirements...



Operation Technologies (OT) are the systems and components which keep a building operational. OT systems include:

- Physical Access Control
- Intrusion
- Video
- Building Management
- Fire Protection

OT systems can work with Information Technologies (IT), but often have unique needs.



(C) Confidentiality – Sensitive or private data is stolen

(I) Integrity – Data is changed or the connecting device is impersonated.

(A) Availability – Resources are forced offline impacting business continuity

Physical Security System Threats

Violation of **privacy, identity theft**

Unauthorized access to building, **missed events, fake video** streams

Designed to protect life cannot fail - must be available 24/7.

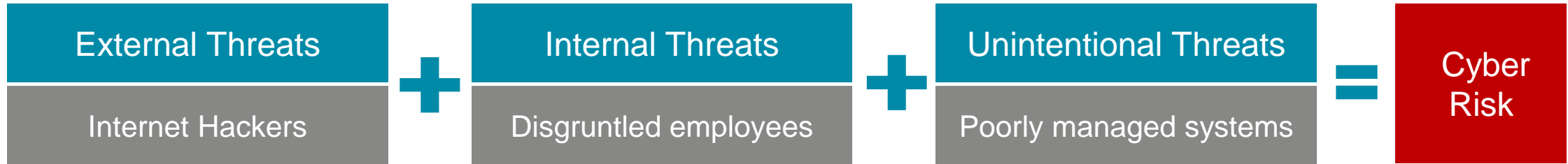


+ Safety: cyber-physical attacks on the rise

...cybersecurity measures must be designed to account for the unique role of OT systems



Attacks continue to disrupt people and businesses...



May 2017 – the NHS was crippled by the Wannacry hack causing over 200,000 computers to lock out demanding a ransom to decrypt files. The attack cost the NHS £92m and resulted in the cancellation of over 19,000 appointments

April 2018 - City of Atlanta was a victim of a ransomware cyberattack. Customers were unable to pay bills and parking violations online, departments had to process requests manually and services, such as hiring employees, were suspended.

March 2019 – Hydro Norsk– malware attack encrypted files demanding a ransom which cost the company £25m.



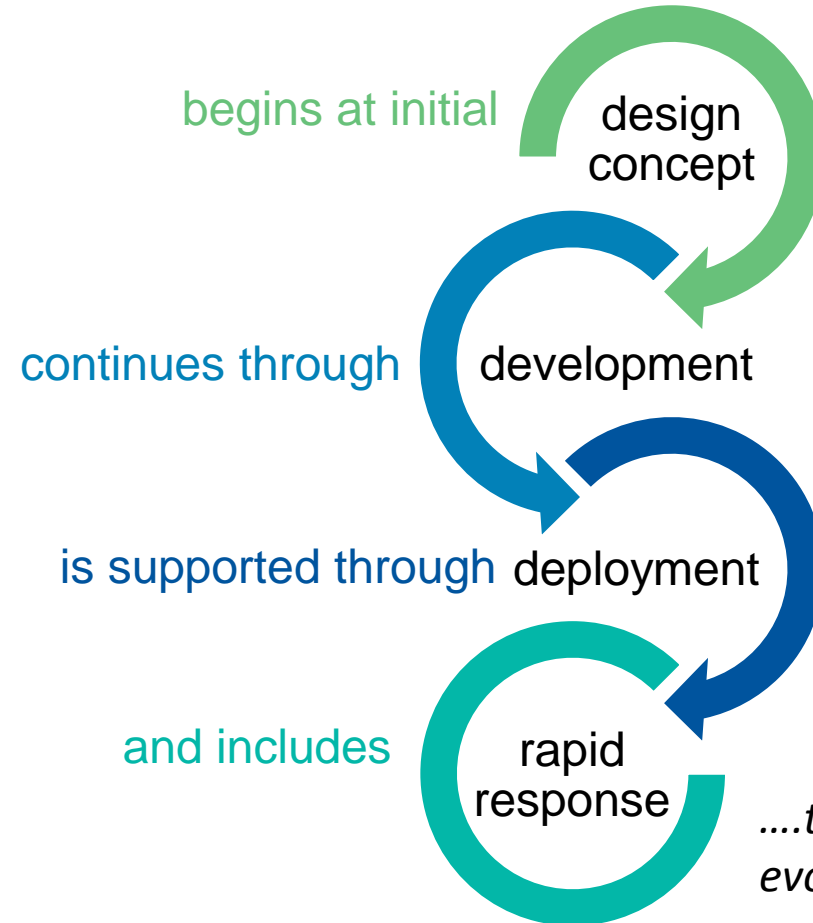


Our holistic cyber mindset...

Johnson Controls' approach to cyber protection is aimed at providing peace of mind to our customers.

We provide and support cyber resilient systems with a range of capabilities to complement the diverse security needs of our customers.

- Policy driven
- Strong governance
- Discipline execution
- Continuous enhancement

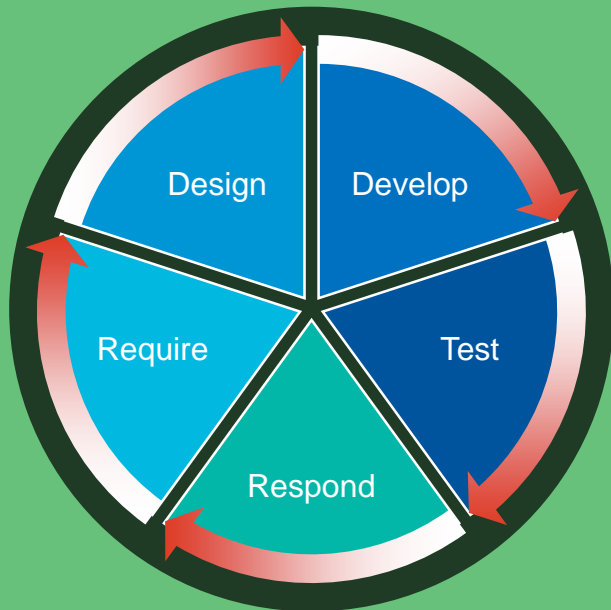


...to meet the comprehensive and evolving cybersecurity environments.



Our cyber protection approach begins with the **design, development and testing.**

Based on Microsoft Software Development Lifecycle (SDL)





The benefits of a comprehensive program

Policy Driven Team

Cybersecurity is not an afterthought

Secure Development

Product designed to be more cyber-resilient

Testing

Testing focused on discovering and addressing critical vulnerability before release

Education

Empowers customer to approach cyber risks pragmatically

Incident response

Dedicated cybersecurity team quickly assesses new threats and vulnerabilities and advises customer on how to reduce their cybersecurity risk



Disruption is Not an Option



A Higher Level Commitment



Expert Driven Designs



Lifecycle Management



Shared Responsibility



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LUNCH



13:00 – 14:00



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