

SOYAL[®]

SOYAL TECHNOLOGY CO., LTD

Smart Access Control / Industrial Control and Cross-Platform Application



Access Control | Industrial I/O | BMS | Property | Visitor System |
LPR Recognition | Facial Recognition | Contactless Lift |
Smart Mailbox | Fire Alarm Escape ...



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- Access Control & Time Attendance
- High Hygiene and Security Lift Control
- Smart Mailbox/Locker
- Smart Parking Lot
- Stored Value Card / Consumption

SOYAL Industrial I/O Series

- Single/Two-Way Multi-Door Interlock
- Escape Door Status Monitor
- Release All Doors in the event of fire alarm
- Auto irrigation/ Scheduled lighting control
- Emergency Status Monitor Display
- Energy-Saving Monitor of Temperature / Humidity Environment

Integration of Cross-Application Platform System and SOYAL Access Control System

- Smart Property Management Platform
- SCADA / BMS Platform
- LPR (License Plate Recognition) System
- Facial Recognition System
- Visitor Appointment Platform

Choose Right Brand / Right Product

Upward and Downward Compatibility / Unlimited Expansion / Stable and Reliable

Q1.

There are many safety
problems in
traditional building

How to solve these problems
in traditional buildings.

Q2.

How to choose a
reliable brand?

Since there are many applications in
smart building, how to choose a truly
reliable brand.

Q3.

How to integrate
different safety
equipment?

How to seamless integrate
various application devices from
different brands.

Why SOYAL ?



Since 1993

Specialized in Access Control & Industrial I/O

More than 28 years in developing Access Control and Industrial I/O devices, which can meet various applications in modern society such as smart building/community / Traffic/Logistics and so on. SOYAL is one of the few hardware manufacturers that combine access control and industrial I/O monitor.



Software & Hardware

Seamless Support

701ServerSQL
Manage SOYAL access control & I/O device' s communication and parameter setting

701ClientSQL
Access control & Time Attendance and graphic animation control software under multi-workstation operation mode



SOYAL-LINK

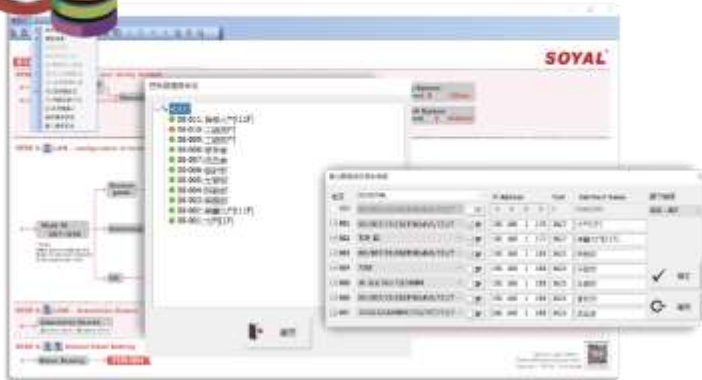
Cross-Application Platform

Provide a cross- bridging platform that offers Json / Xml /Modbus / ODBC Database communication interfaces, which can facilitate the seamless integration of software developer and SI system integrator with Property Management / SCADA / Visitor Appointment / BMS System and various APPs

Integration Structure of SOYAL Access Control & Industrial I/O and Cross-platform Application



701ServerSQL
Access Control and
TCP-Link Server



Support SOYAL hardware communication and parameter settings; Built-in a cross-bridging platform (SOYAL-LINK) and provide various communication interfaces for seamless integration with SOYAL devices.

701ClientSQL
Access Control and Graphic
Animation Control Software



Support door group control, time control, historical data query, user data setting, daily report, monthly report, statistical report and other setting functions.



SOYAL-LINK

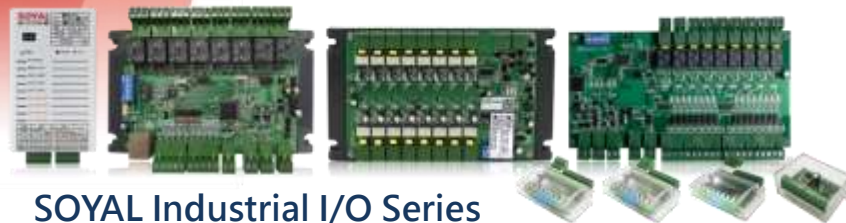
What is SOYAL-LINK?

SOYAL-LINK is a cross-platform bridge and a high-speed passageway that assists in other system integration with SOYAL hardware devices. When choosing SOYAL hardware devices, you can integrate all devices through SOYAL-LINK function that is built-in SOYAL 701ServerSQL software for various applications.





SOYAL Multi-Functional Controller



SOYAL Industrial I/O Series

Union Body Multi-Demand and Cascade Hardware System Structure for Access Control / Smart Building / Industrial I/O Application



Cascade Hardware Structure

As the scale of the installation site growth, the system capacity and security level can be directly expanded by adding new devices.



In-Field Firmware Upgrade

In addition to standard function, SOYAL hardware also support diversified firmware applications that allows each product to easily modify functions as needs



Choose SOYAL Multi-Functional controller to realize...



Access Control &
Time Attendance



Hygiene and Security
Anti-epidemic Lift Control



Smart
Mailbox/Locker



Smart Parking Lot



Stored Value Card /
Consumption



Choose SOYAL Industrial I/O Series to realize...



Single/Two-Way
Multi-Door Interlock



Escape Door
Status Monitor



Release All Doors
in the event of fire
alarm



Auto irrigation/
Scheduled lighting
control



Emergency
Status Monitor
Display



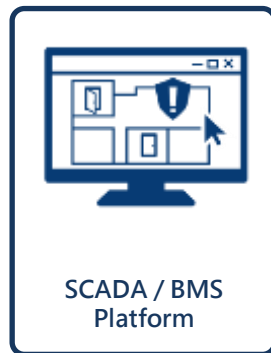
Energy-Saving Monitor of
Temperature / Humidity
Environment



Choose SOYAL hardware and cross-application
platform integration to realize...



Smart Property
Management Platform



SCADA / BMS
Platform



LPR (License Plate
Recognition) System



Facial Recognition
System



Visitor Appointment
Platform

02.

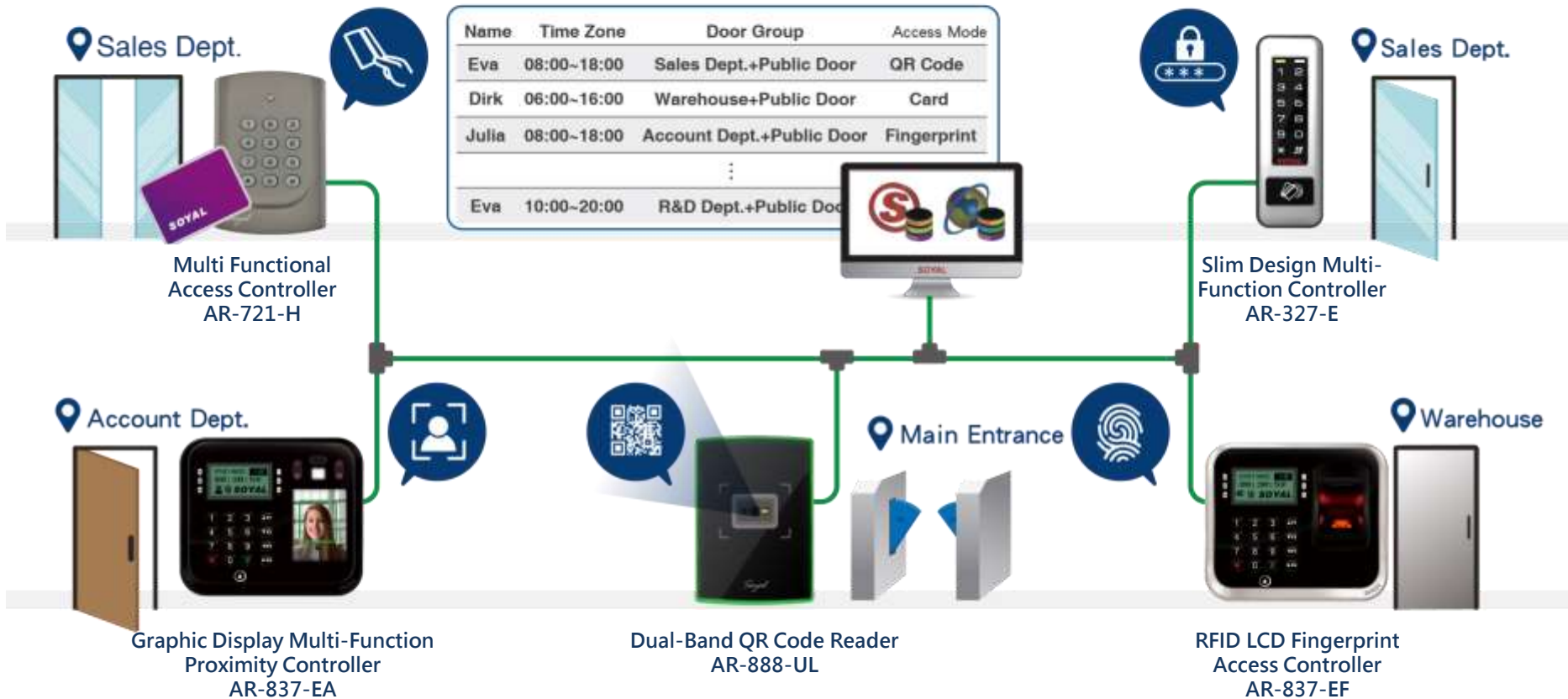
Application Introduction

-SOYAL Multi-Functional Controller-



Smart Access Control

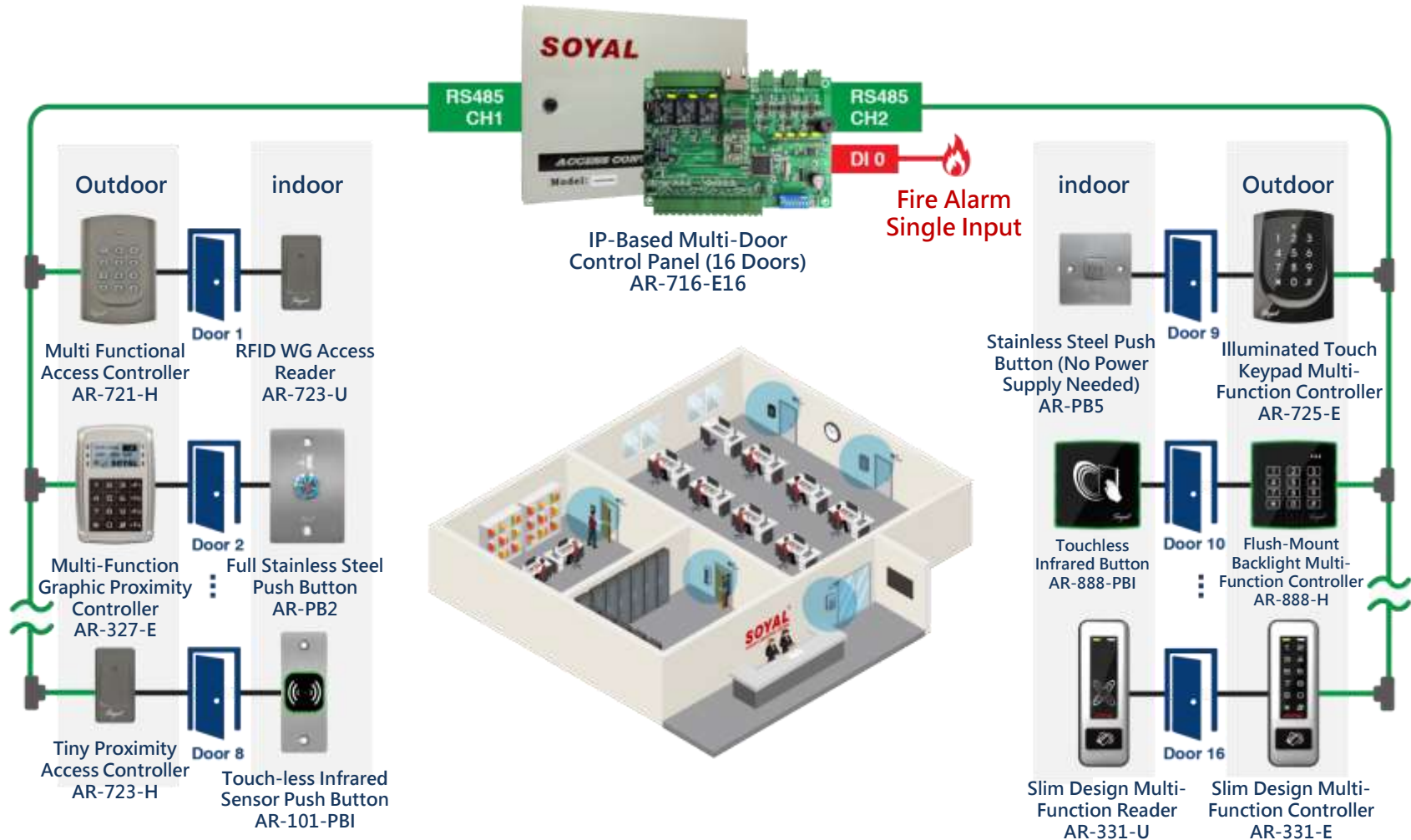
Versatile access control devices (RFID card/Fingerprint/Face/Traditional keyboard button/Touch panel /Metal casing/Flush mounted or surface Installation); Work as standalone mode, networking or with multiple door controller for centralized management; the personnel can be assigned to access which doors / gate at what time.





Smart Access Control – Multi-Door Controller

Multi-door controller can centrally manage 32 readers/16 doors, up to 65,000 user cards; Built-in fire alarm input to open all doors in the event of fire and emergency user list when the readers are disconnected from controller ; storage memory up to 10 years when power off





Smart Time Attendance

All-in one access controller and time attendance controller can be flexibly applied to employee management such as in company/factory. LCD screen displays duty in real time with name voice, 8 types of duty function keys, Generate Daily report /Monthly report/Statistical report and export raw data to the 3rd party ERP system or salary system for integration



Support 8 sets of duty type

User Capacity
1600



User Capacity
4500
(1-2 fingerprints for each user)



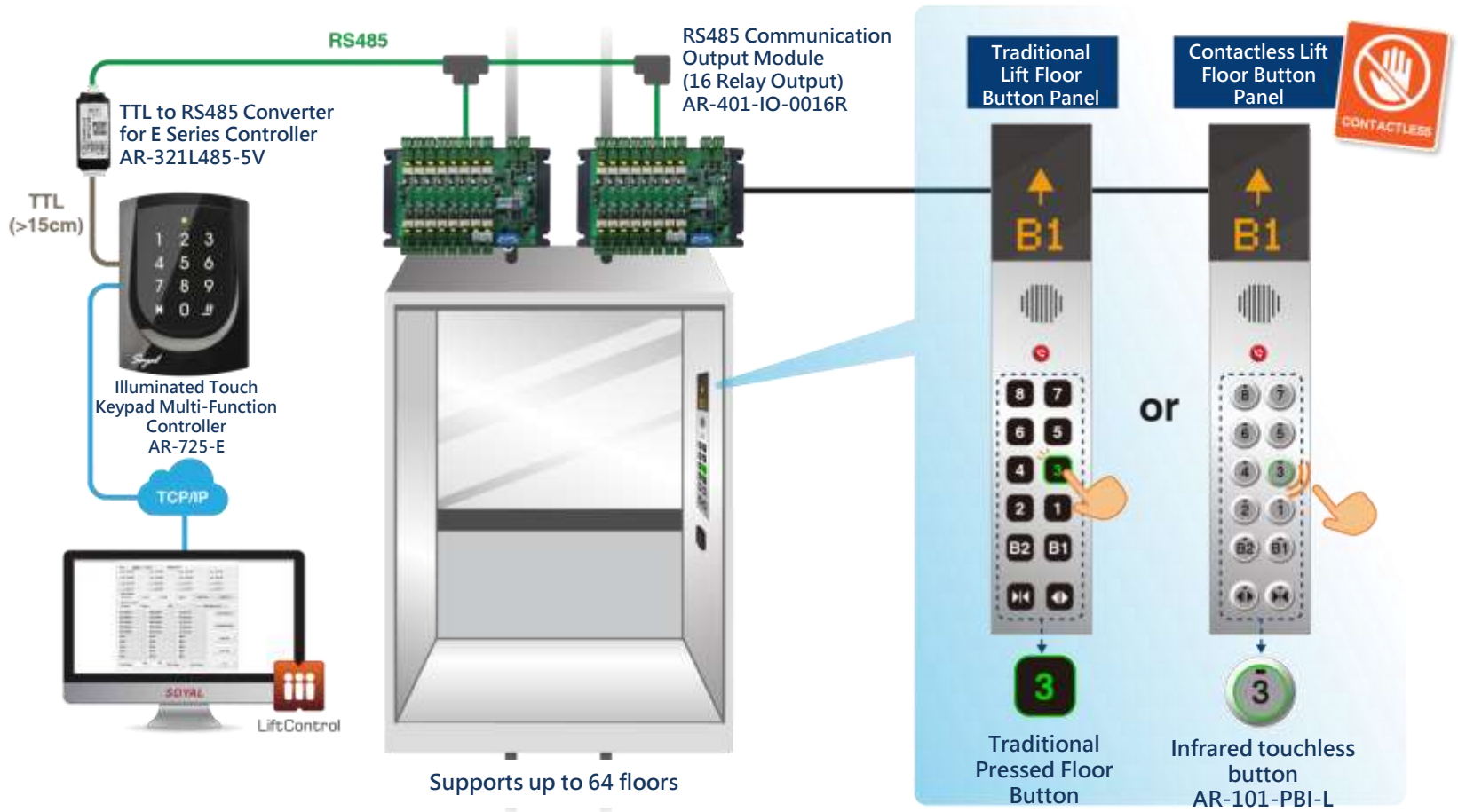
User Capacity
3000





Hygiene and Security Anti-epidemic Lift Control – Contactless Infrared Button

SOYAL offers complete lift control devices including lift controller AR-401-IO-0016R, RFID card reader and centralized control panel; Supports up to 64 floors and 16,000 users; Anti-epidemic type contactless infrared button replace traditional floor button, which greatly reduces the risk of infection caused by contact.



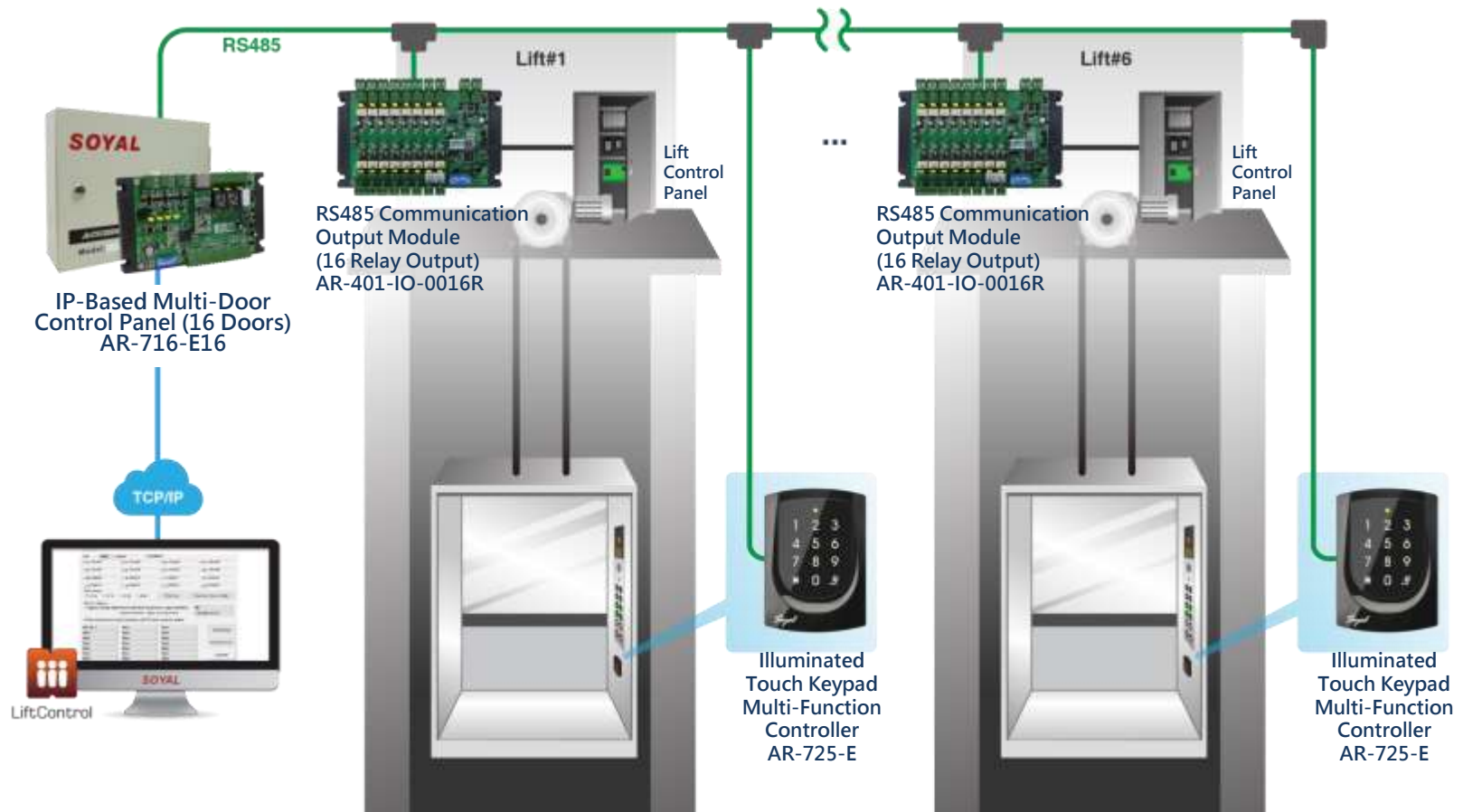


Hygiene and Security
Anti-epidemic Lift Control

SOYAL[®]
ACCESS & INDUSTRIAL CONTROL

Centralized Lift Control

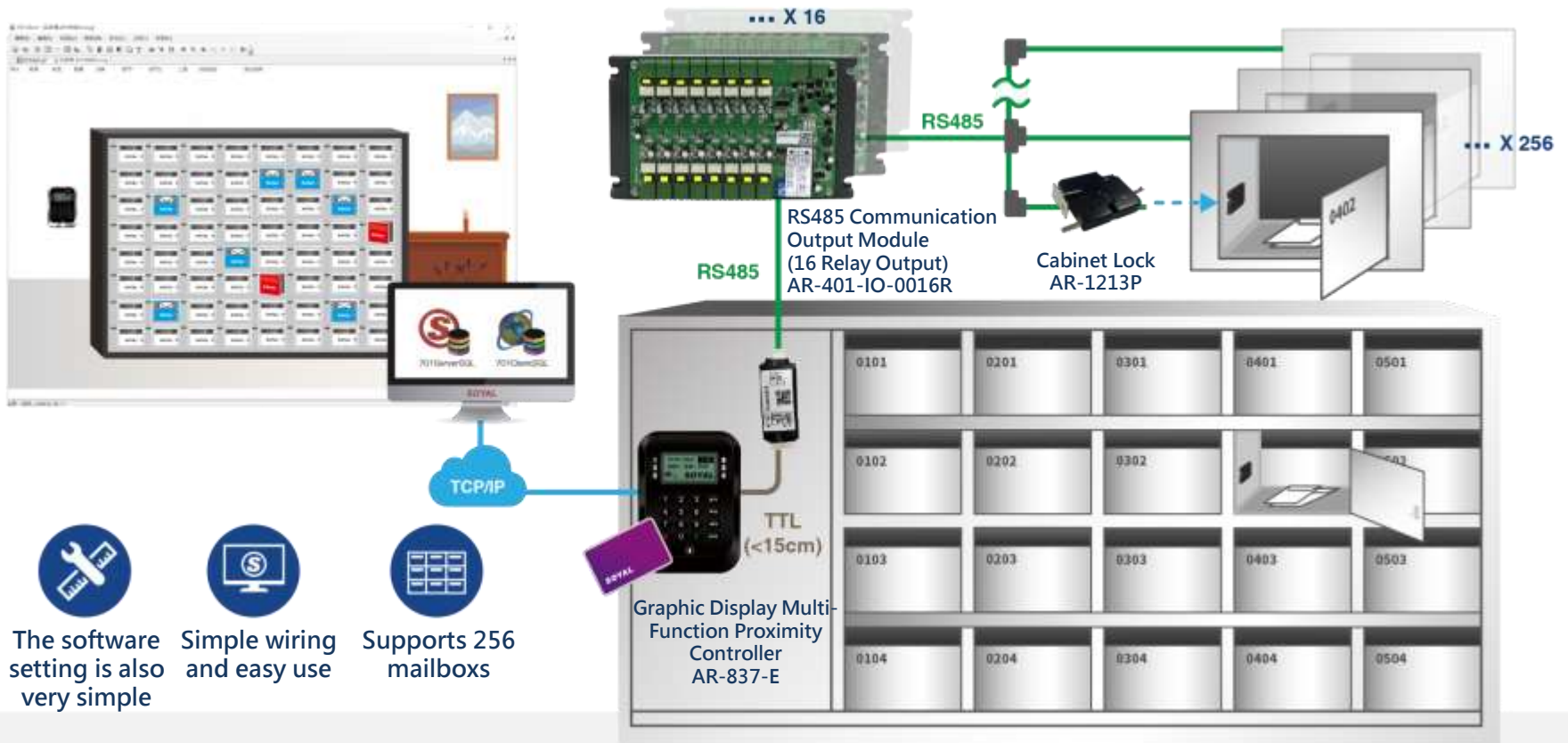
One multi-door controller AR-716-E16 can manage up to 14 lifts; lift controller AR-401-IO-0016R are directly connected to multi-door controller and placed on the top of the building to directly communicate with elevator control panel. If lift devices failed, the engineer doesn't need to open the elevator car anymore and the elevator still can run during the periods, this structure is convenient for inspection and maintenance.





Smart Mailbox- Simple and Economical Mailbox Control Solution

One controller (AR-837-E) can connect 16 units of relay module AR-401-IO-0016R and cabinet lock AR-1213P to control up to 256 mailboxes; Only fill in the mailbox number in the field of Alias on 701Client Software, swiping the card on controller and the corresponding mailbox will be open; To replace the traditional key to open the mailbox, it is simple wiring and easy to use.



The software setting is also very simple



Simple wiring and easy use

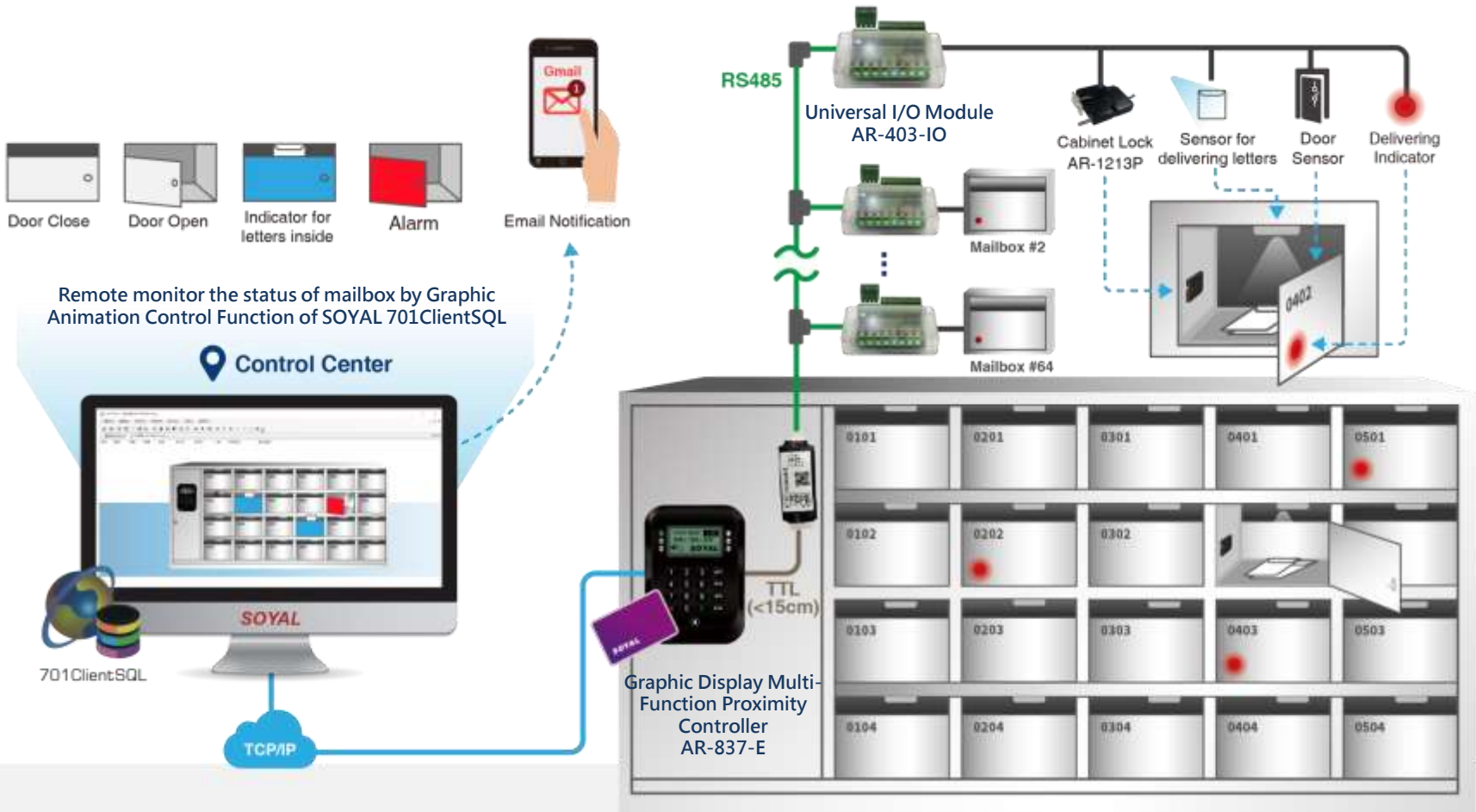


Supports 256 mailboxes



Smart Mailbox – Status Monitor / Abnormal Event Notification

SOYAL Enterprise E controller can be connected to 63 sets of universal module AR-403-IO to control 63 sets of mailboxes; it can provide indicators of delivering letter, letters inside, alarm for unclosed mailbox, and can use 701ClientSQL software to monitor the status of mailbox usage, send E-mail to remind the users.





Smart Locker – Shared Storage by randomly choosing free locker

SOYAL mini controller AR-101-H is recommended in temporary lockers; visitors can swipe a proximity card, keyfob and even use NFC-enabled Mobile phone to replace traditional keys to open the vacant locker; when connecting to computer · the records of the use time and counter number for the administrator to check.

Smart Mini Access
Controller
AR-101-H



Status Indicator
Green LED = Vacant



It means that any member with membership card can directly swipe the card to unlock the locker and put in belongings. After closing the door to locker it, swipe again the card until it turned into red LED; means the locker is occupied.

Smart Mini Access
Controller
AR-101-H



Status Indicator
Red LED = Occupied



When controller shows red LED light, when swiping membership card (not the same card holder with the previous one) into the occupied locker, the locker will beep two times indicated invalid card or wrong card detected.



When the controller shows red LED light, it can be unlocked by swiping the same card with previous membership card holder. After swiping the card, the controller will turned into green LED light indicated, the locker is vacant and can be used by the next member.

 Control Center



701ClientSQL

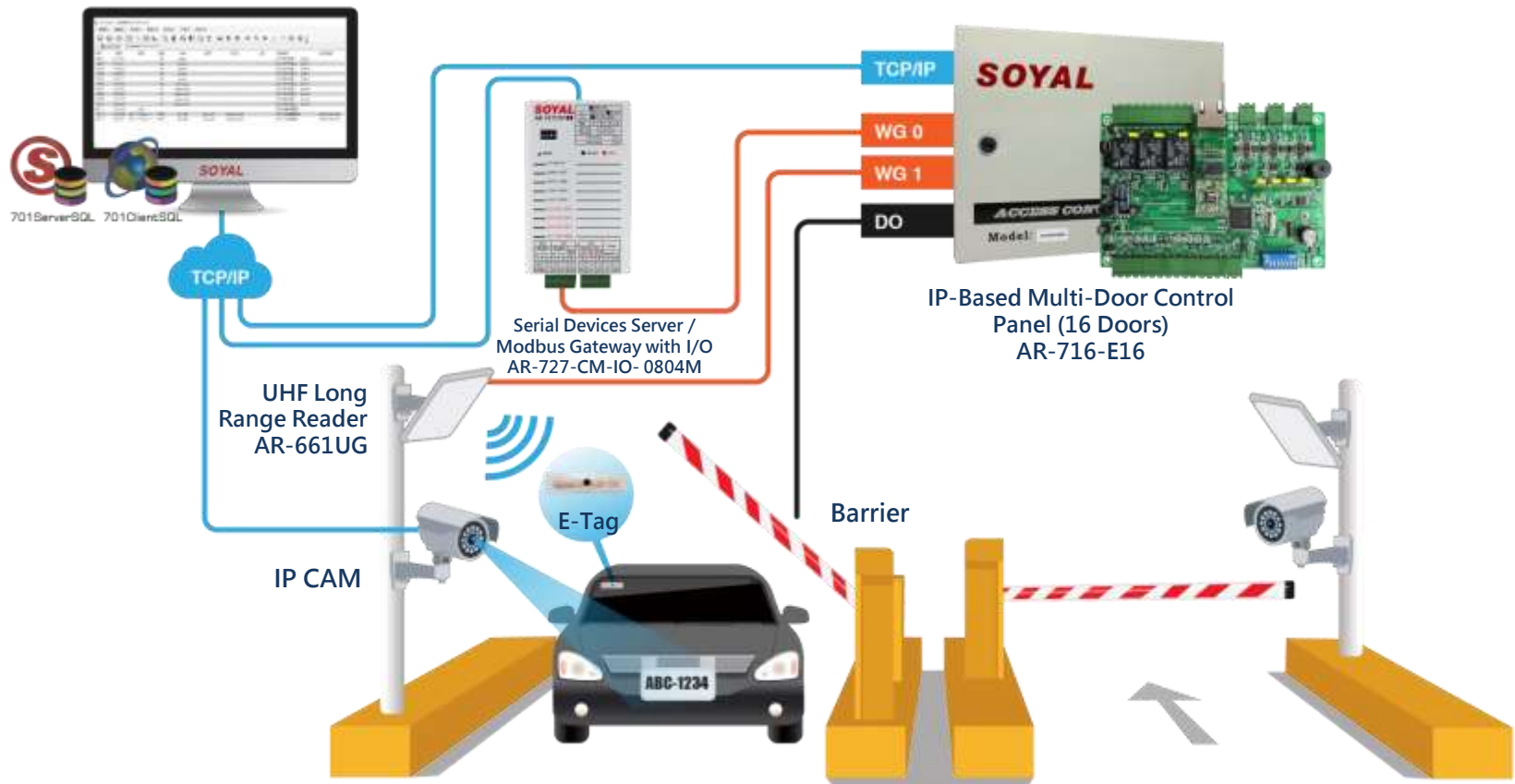
Remote monitor the status of locker by
Graphic Animation Control Function of
SOYAL 701ClientSQL





Smart Parking Lot – UHF Tag & LPR (License Plate Recognition)

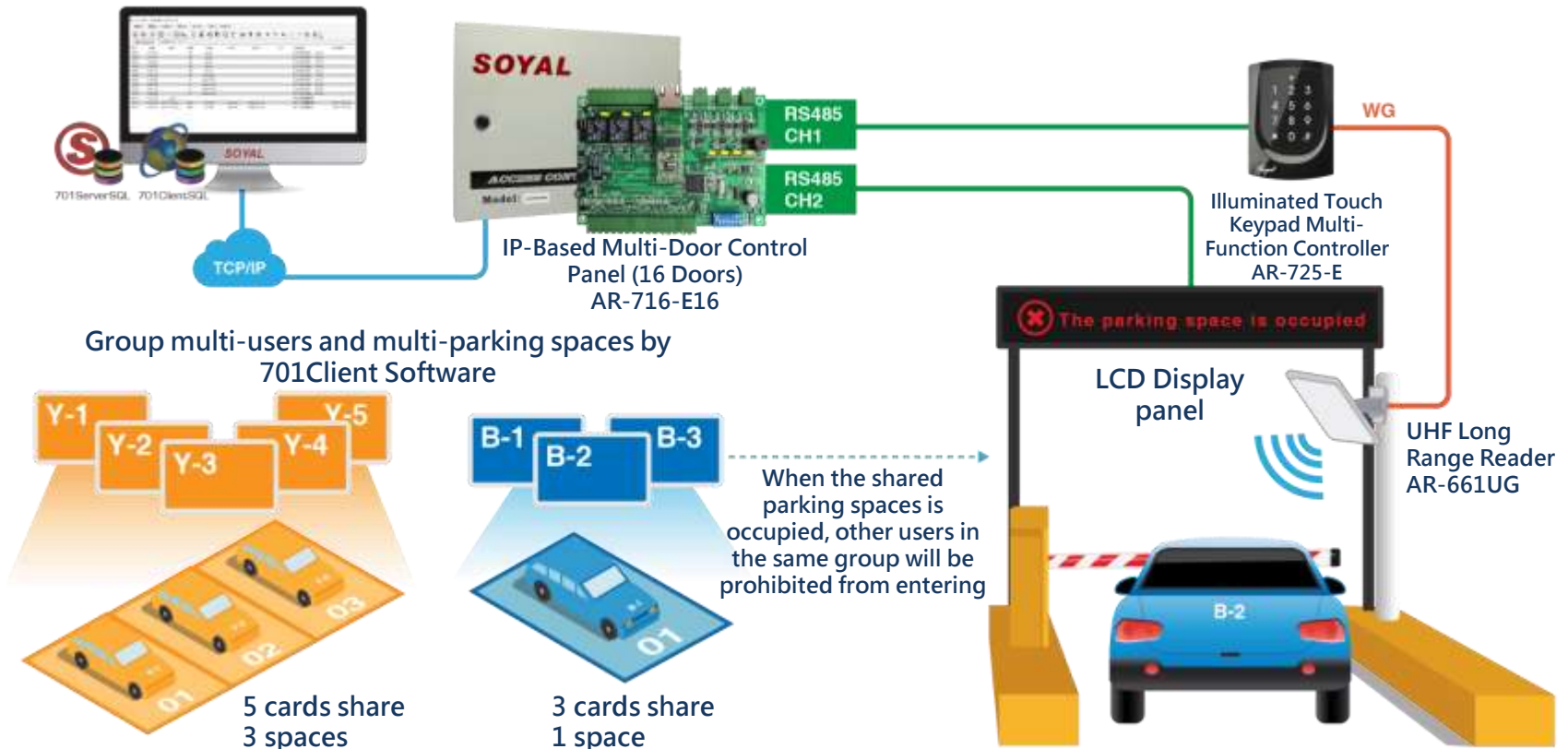
After dual identification through both reading UHF tag by UHF long range and reading vehicle license plate by LPR IP camera is passed, WG card number is sent to controller to judge if the vehicle is valid or not and then open the barrier, in which is convenient and safer.





Smart Parking Lot – Shared Parking Space/ Multi-vehicles Share Less Spaces

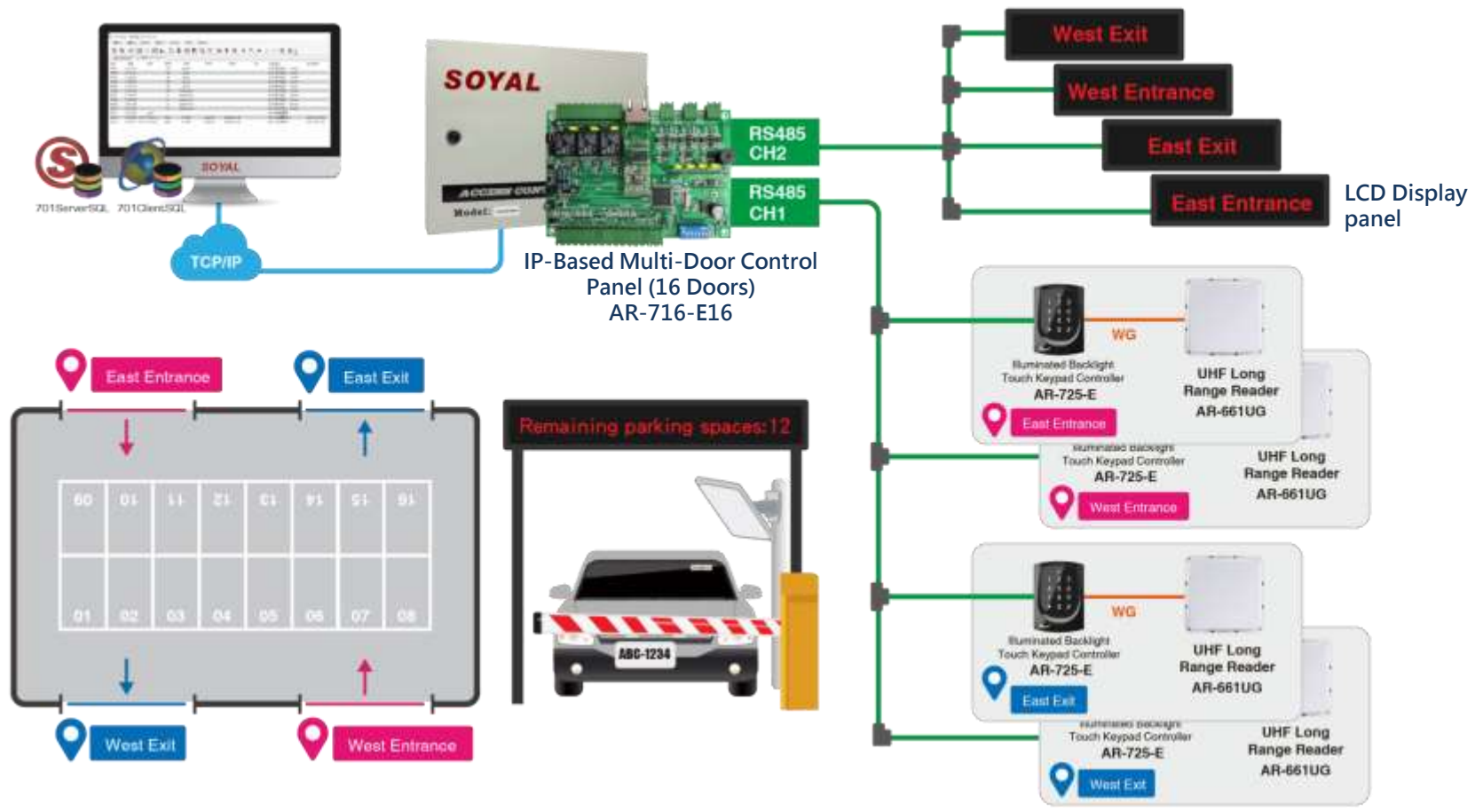
Set up different members of the family or company shift staff to share the few parking spaces, in which can increase the usage rate of parking spaces and avoid waste of resources; Real-time display parking space usage status by LCD Display panel (The parking space is occupied, Anti-pass back error, invalid cards and etc.)





Smart Parking Lot – Multi-door Anti pass back/ Parking Space Status Indicator

Multi-door controller AR-716-E16 can connect many sets of card readers and LCD display panel through CH1/CH2 RS485 port and manage up to 16,000 vehicles. The vehicle can access from different entrances and exits and will be prohibited from anti-pass back error. To avoid the vehicle following, the special firmware can set the delay time of reading same card to prevent the reverse reader from repeatedly reading the same card.



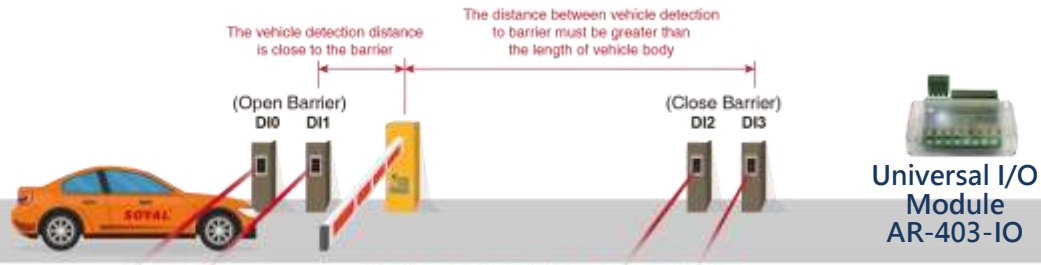


Smart Parking Lot – Direction Recognition by Universal I/O Module

Integrated with IR or induction coil, I/O module AR-403-IO-0404M built-in programmed feature of RF/FF falling (front vehicles recognition) and RF/FF rising (rear vehicles recognition) to determine accuracy of when the barrier will be open/close by detecting the vehicles position or to give siren output or LED for other driver to be aware of another vehicles that could minimize accident.

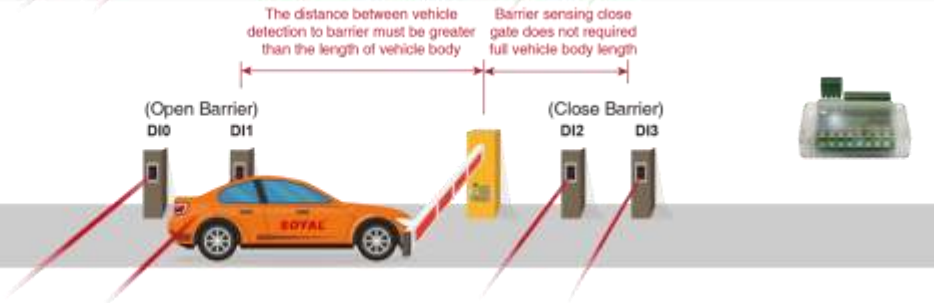
A. Front Detection

FF/RF falling setting is for Front Detection



B. Rear Detection

FF/RF rising setting is for Rear Detection



C. Determine to Set as Front Recognition or Rear Detection

Barrier open gate detection FF/RF Falling Mode
Barrier close gate detection FF/RF Rising Mode





Stored Value Card / Consumption

Versatile devices of Stored-value/Consumption/Energy saving

Read and write data such as value/time/location by card programmer to the designated block of Mifare card; when swiping the programmed card on RFID controller reader / energy saver, it can realize the consumption and energy-saving application by the settlement of time/number of times, etc.



Write value to Mifare card via programmer



MIFARE Card Programmer AR-725-P



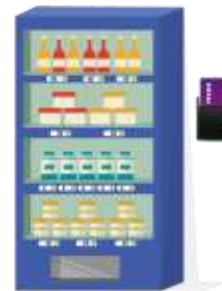
Date
Current Time
Used Time
Fees

LCD Card Energy Saver AR-837-W

Card Energy Saver AR-888-W



Air-Conditioner



Vending Machine



Electric vehicle charging station

02.

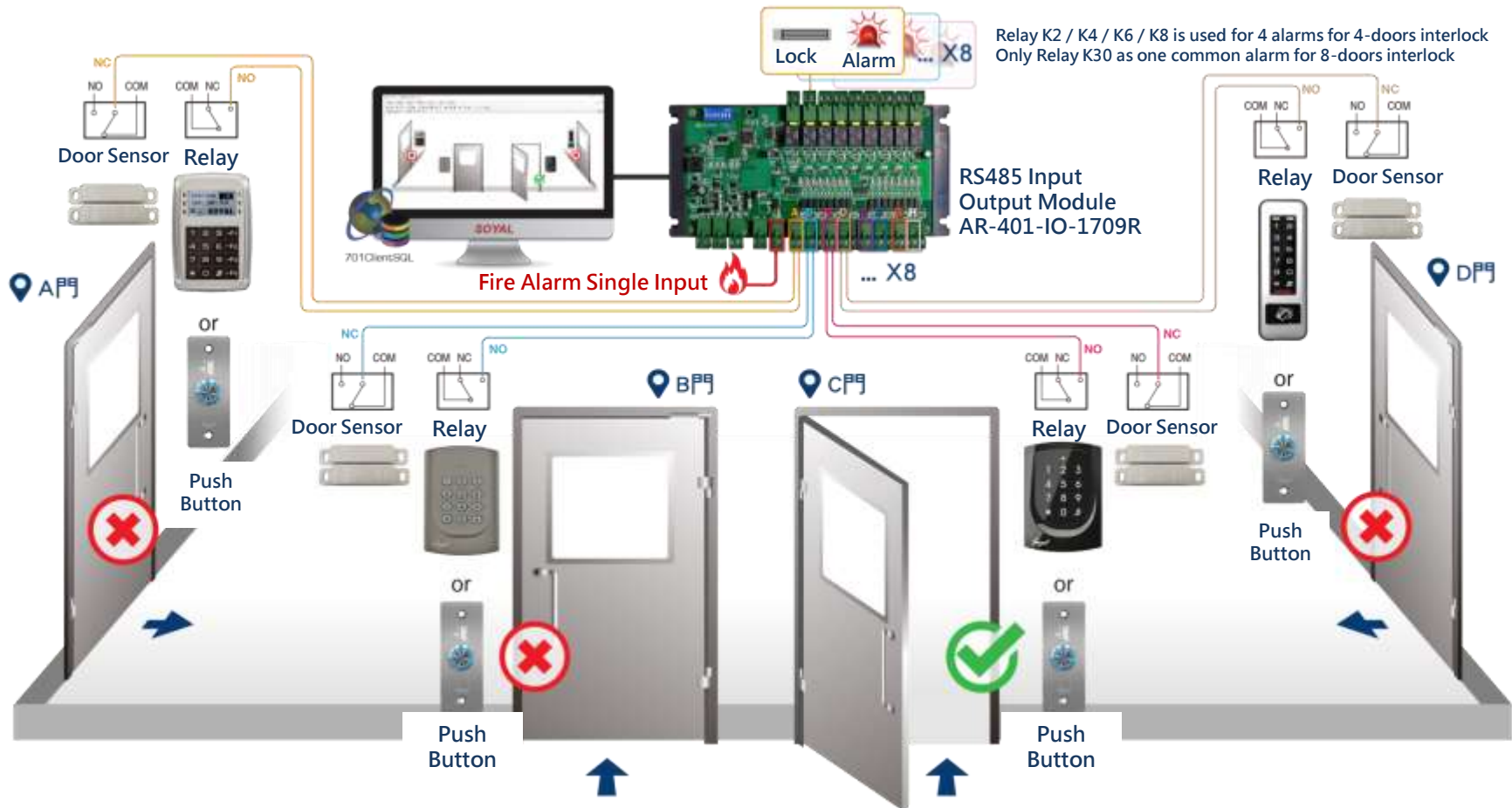
Application Introduction

-SOYAL Industrial I/O Series-



Single/Two-Way Multi-Door Interlock -Caring room/ Laboratory/Clean room

2-8 doors interlock control by I/O module AR-401-IO-1709R with customized firmware that can connect up to 8 sets of access controller, exit button, door sensor, electric lock and alarm. When one door is opened, the other doors cannot be opened; Built-in fire alarm input that can release all door locks in emergency; the application is suitable for high hygiene places.

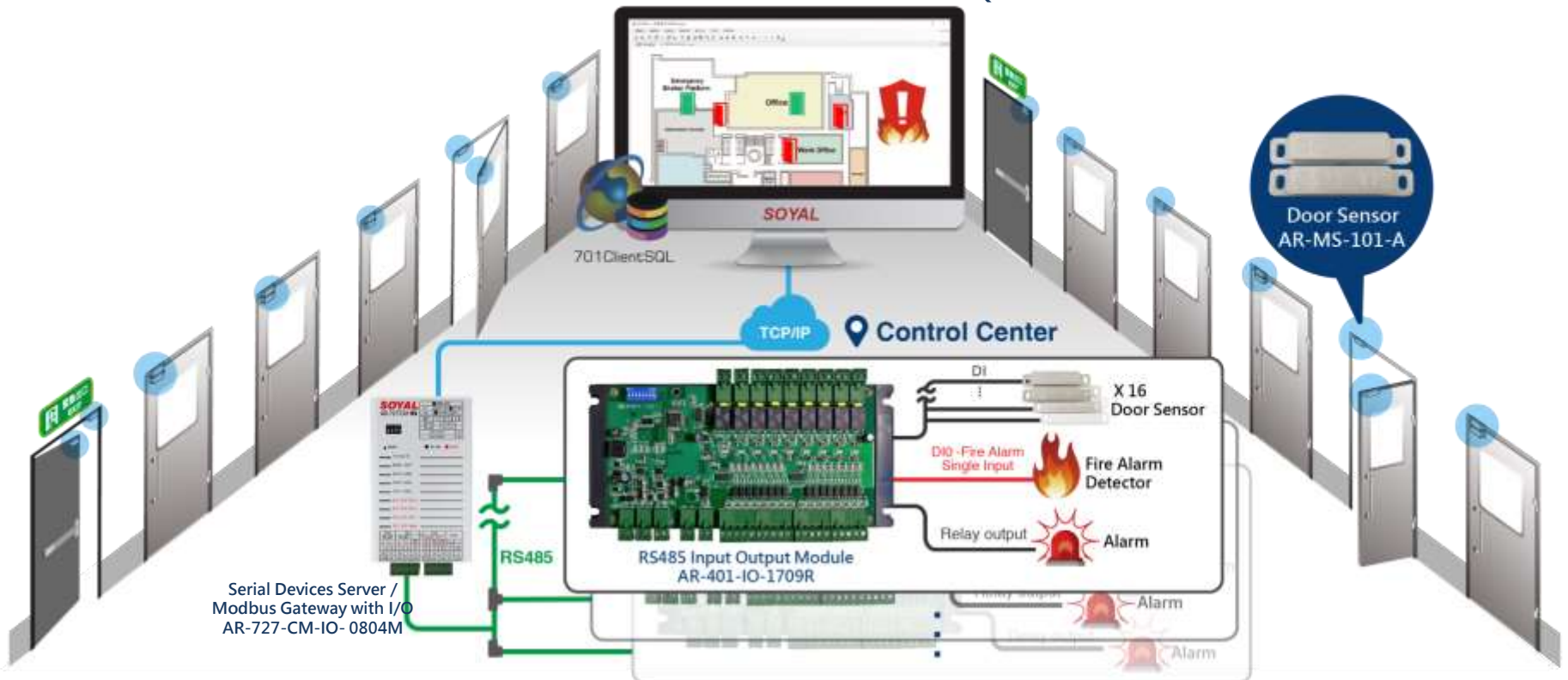




Cloud Monitor of Escape Door in Building

Intelligent I/O module AR-401-IO-1709R is built-in 17 DI input that can be connected to 16 sets of door sensor and one fire alarm sensor; Connect up to 32 sets of AR-401-IO-1709R through Network converter AR-727-CM to computer, the graphics control function of 701Client software can detect up to 512 doors status at the same time and the alarm can be also connected by RO output as abnormal event notification.

Remote monitor 512 doors status by graphic animation control software 701ClientSQL

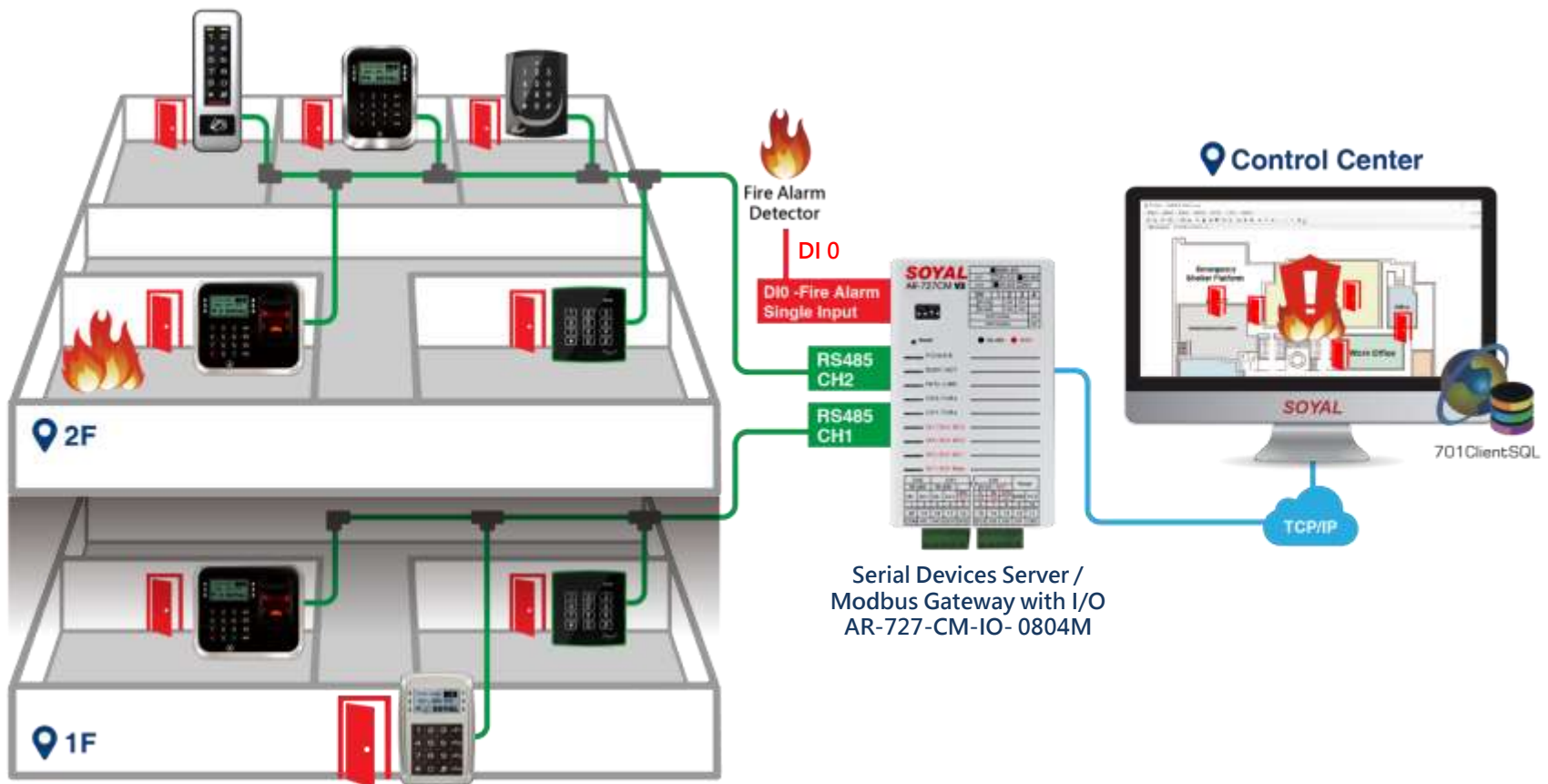




Release All Doors in
the event of fire alarm

Fire Alarm Releases All or Designated Doors via RS485 Connection

Network server AR-727-CM-IO-0804M is built-in DI0 input that can be connected to fire alarm detector; when the fire alarm is triggered, all or designated controllers connected to AR727CM CH1/CH2 port can be released door locks for escape.

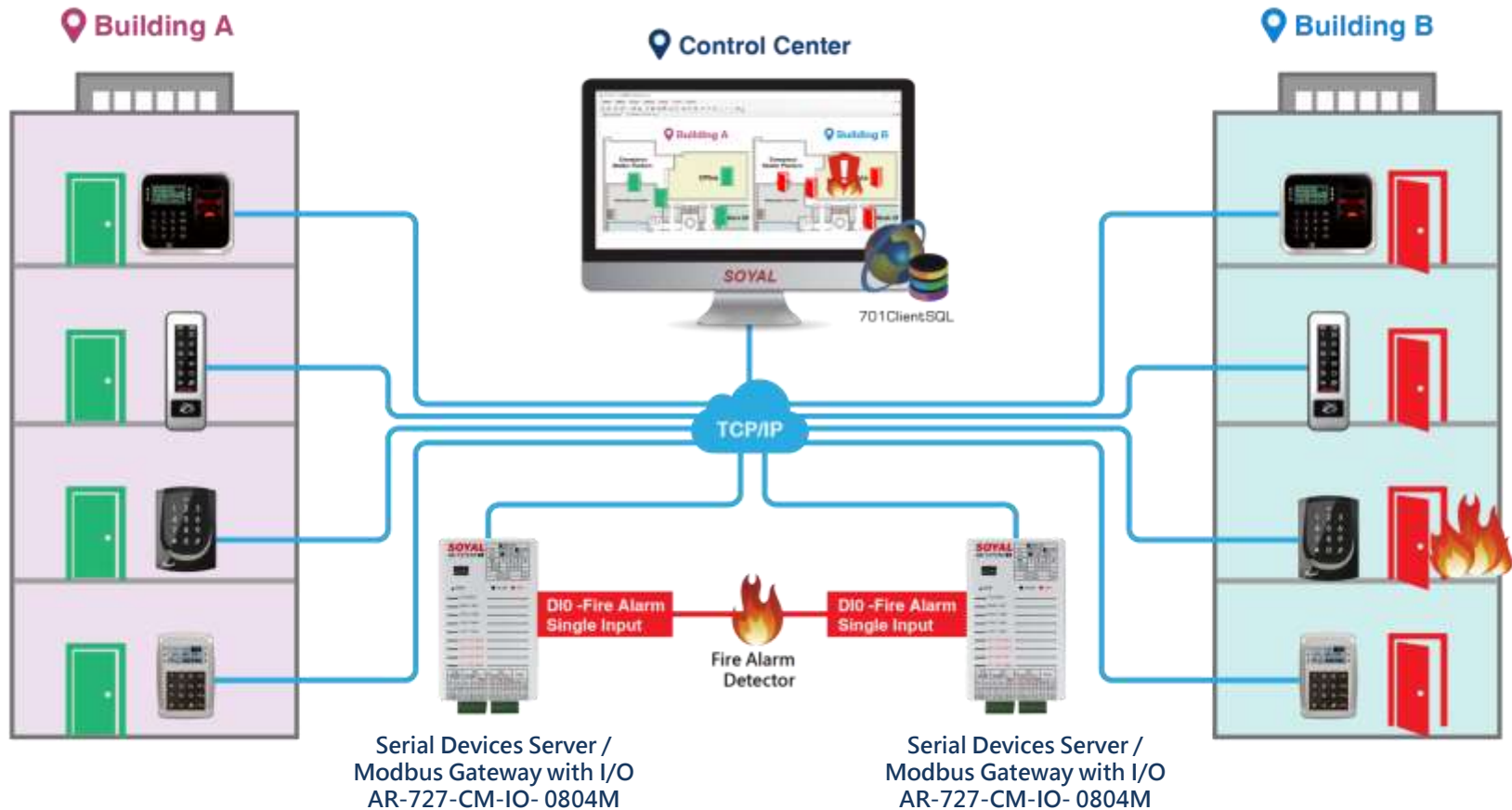




Release All Doors in
the event of fire alarm

Fire Alarm Releases All or Designated Doors via UDP Broadcast

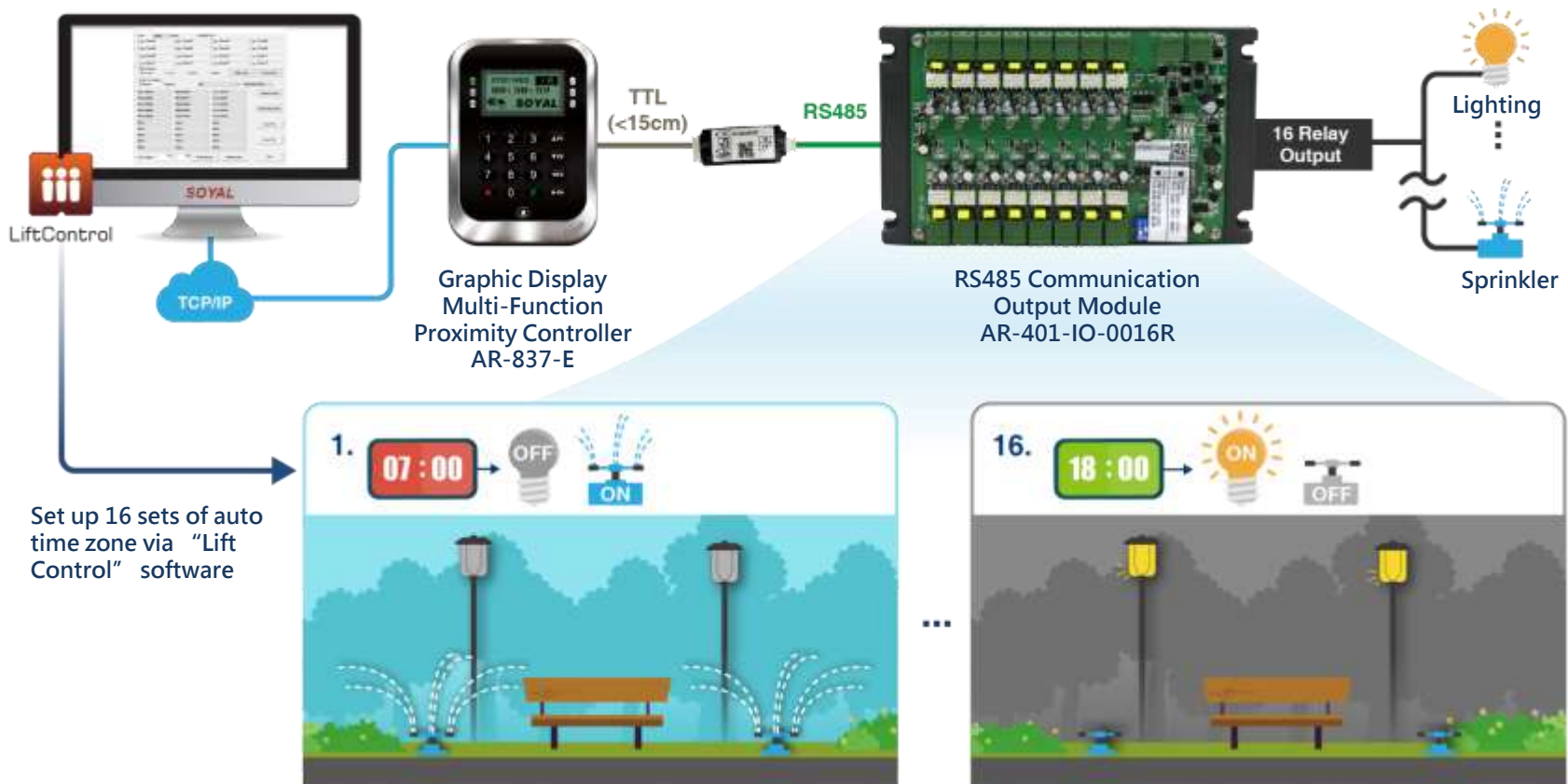
Network server AR-727-CM-IO-0804M is built-in DIO input that can be connected to fire alarm detector; all controllers connected under the same network can be released door locks via UDP broadcast method; the network controller can also be set to accept any or only one signal of network server to release door lock.

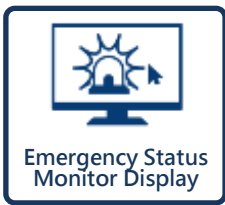




Energy Saving Application – Auto Scheduled Control of Lights/ Air-conditioner / Sprinkler

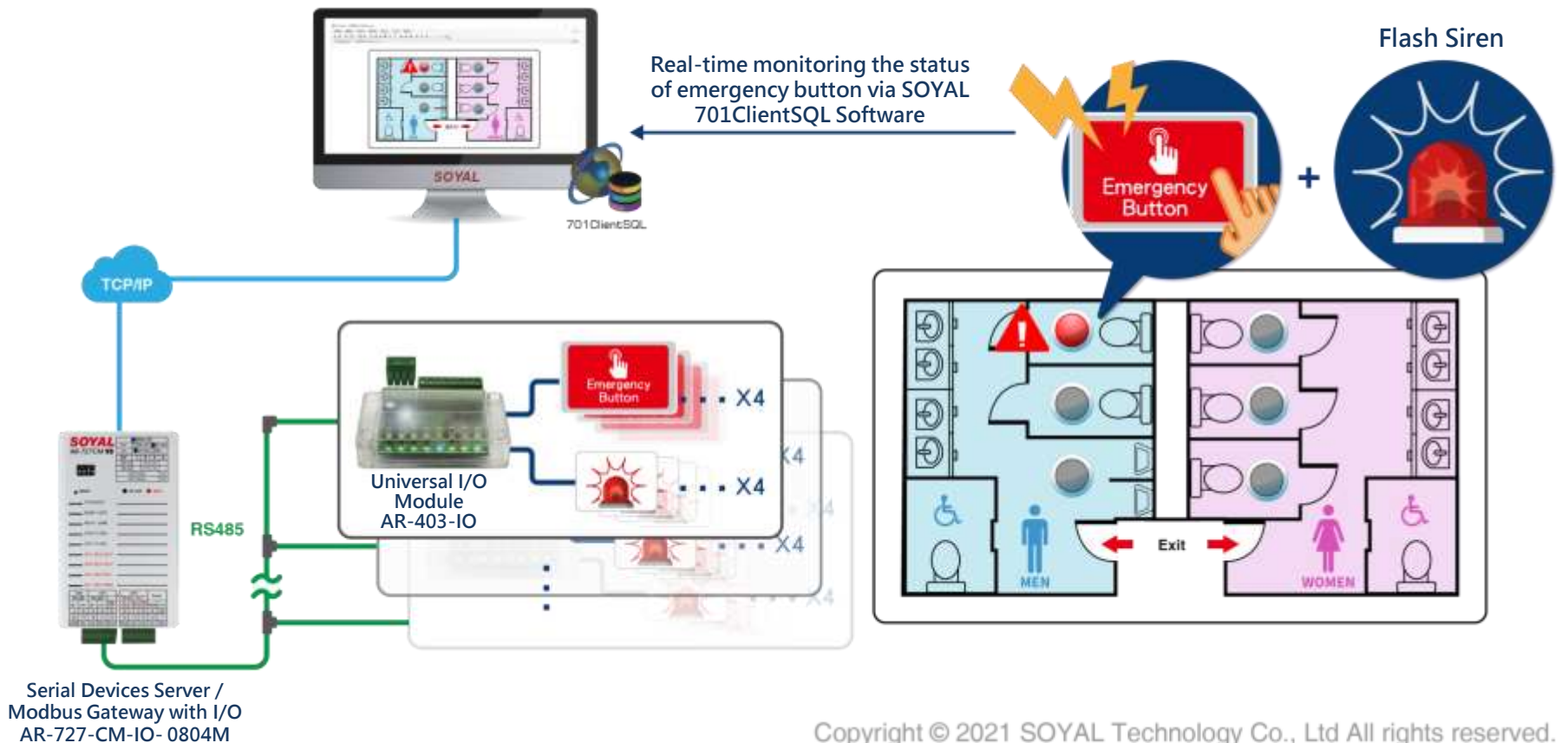
SOYAL Enterprise E controller can connect to the relay output module AR-401-IO-0016R via TTL converter and each module can connect 16 sets of Lighting / Air-conditioners / Sprinkler; 16 sets of auto time zone per day can be set via SOYAL software "Lift Control"; during the setting periods, automatically turn on/off devices to save power and energy.





Emergency Help and Notification in Public Restroom

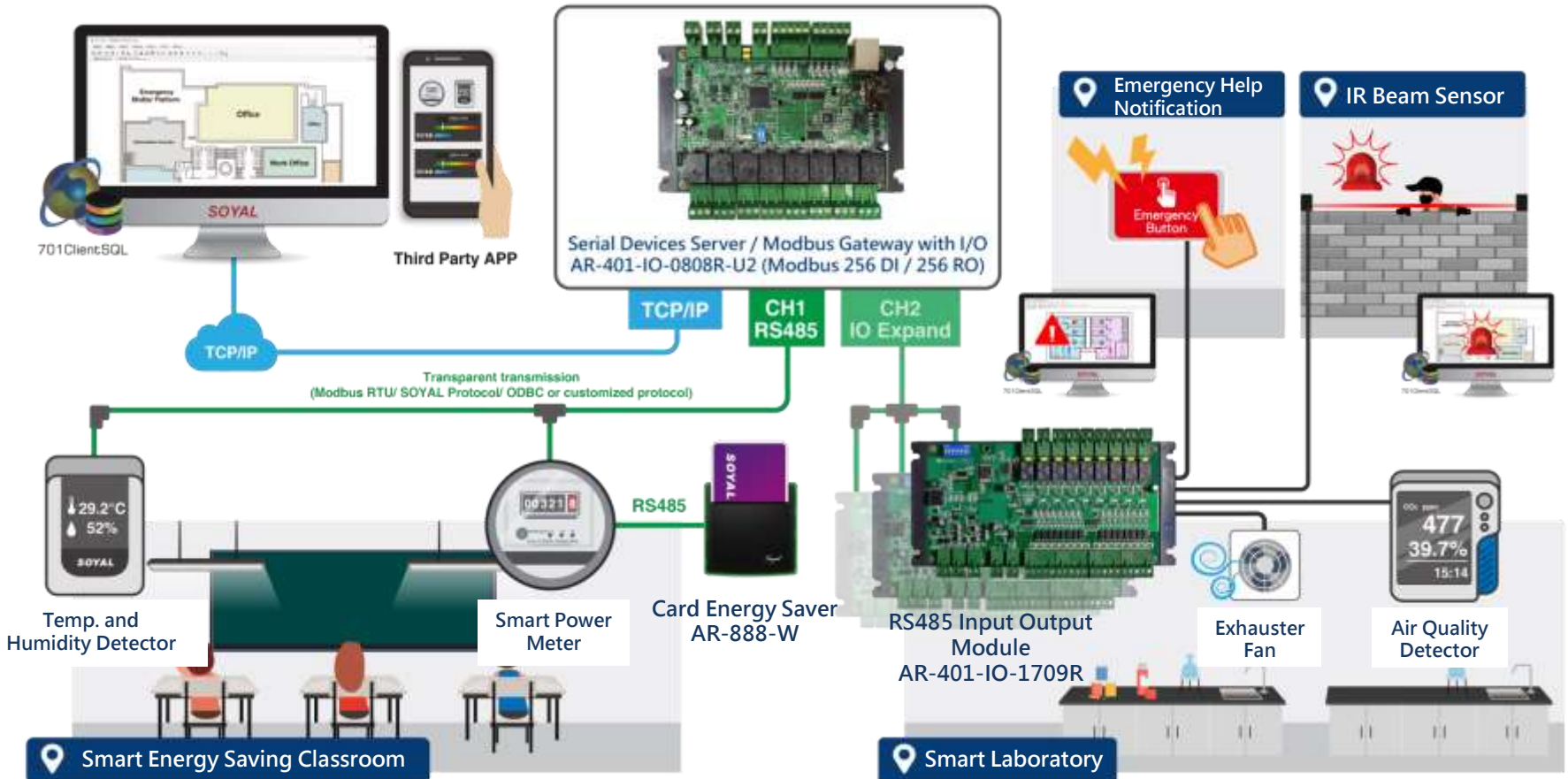
Universal mini module AR-403-IO has 4 built-in DI/DOs, which is small in size and easy to install in public restroom; when connected to emergency button and flashing siren, the situation can be monitored in real time through SOYAL 701Client software. When someone presses the emergency button for help, the manager can be notified in real time and go to the place for help.





Smart Energy Saving and Safety Monitoring Solution on Campus

SOYAL network server AR-401-IO-0808R-U2 supports multiple communication protocols such as Modbus TCP and multiple I/O points; CH1 RS485 Port is transparent transmission that can connected many equipment to monitor and transmit temperature and humidity, electricity degrees to graphic animation control software; In CH2 Port, it can also expand up to Modbus 256 DI / 256 RO, in which can be connected with IR beam sensor, emergency button, air quality monitor and exhauster fan on campus that can ensure real time monitor of campus safety.



02.

Application Introduction

-Integration of Cross-Application Platform System
and SOYAL Access Control System-



Smart Property Platform + Access Control System

The property management APP can send Json / Modbus commands to access controller through SOYAL link. The resident can send QR Code to visitor and allow the visitor to scan QR Code to access the building during the specified period, or remote open door for visitor; if there is a registered letter or a management fee is required, the resident goes home and swipe their card, the controller will pop-up notification.



JSON

```
Card ID"TagUID": "0x00000000057B235"
Start Date / Time "Begin_dt": "2021-5-11 00:00"
End Date / Time "End_dt": "2021-6-18 23:59"
Available Floors "Lift": "0x3A5B67DE",
Available Door "DoorAccess": "0x00FF",
Password "PIN": 1111
```



SOYAL-LINK

Modbus

Get I/O Status:

```
0x01 Read Coils / Echo DO Status: On / Off
0x02 Read Discrete Inputs / Echo DI Status Open/Close
```

Set DO Output Status

```
0x05 Write Single Coil, two status: FF00 = On, 0000 = Off
0x0F Write Multiple Coils
```

SOYAL Access Control System





SCADA & BMS Platform + Access Control System

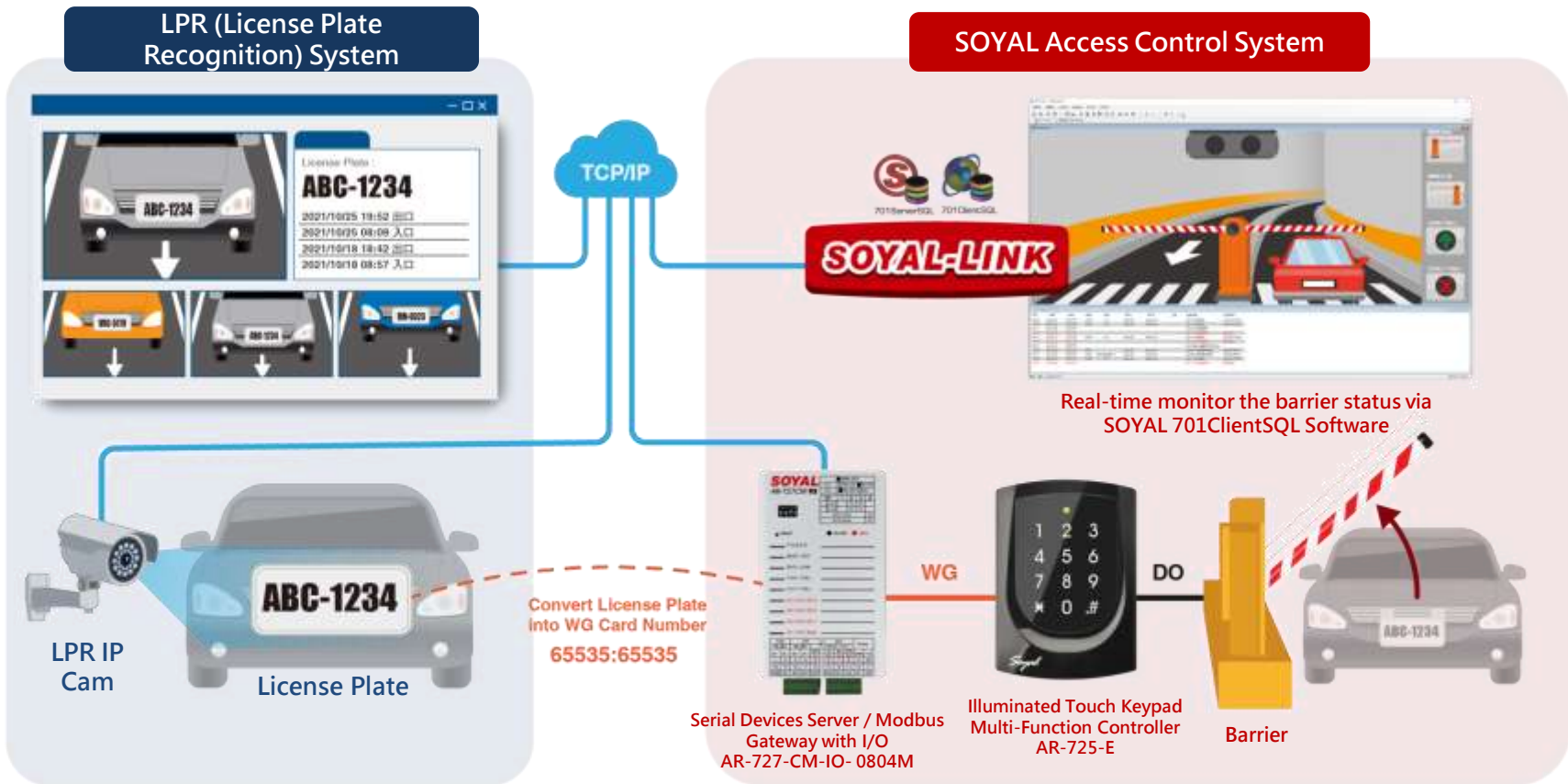
SCADA and BMS system can be communicated with SOYAL 701ServerSQL through Modbus to read the status of devices connected to 701ServeSQL such as on/off status, Alarm status) and then display it in their software and take corresponding actions such as remote open door, trigger an alarm), in which achieve perfect integration of access control and I/O equipment.





LPR (License Plate Recognition) System + Access Control System

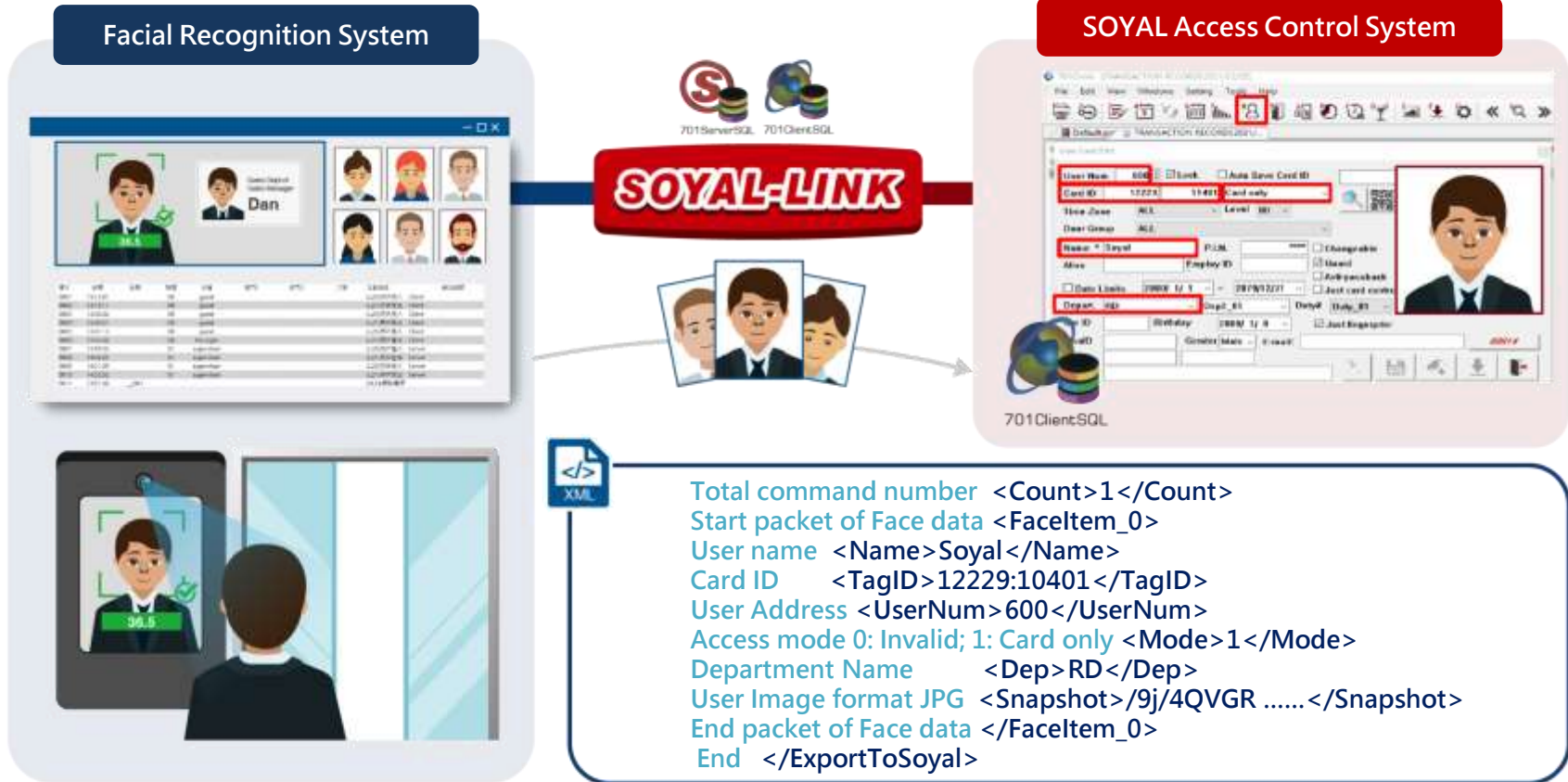
IP based LPR Camera can be integrated with SOYAL TCP/IP to WG Converter AR-727-CM-IO that can convert license plate number to Wiegand card number, send it to SOYAL controller through WG output port to trigger the barrier opening. With Multi-door controller, it can also achieve multi-door anti-passback in Parking Lot management.





Facial Recognition System + Access Control System

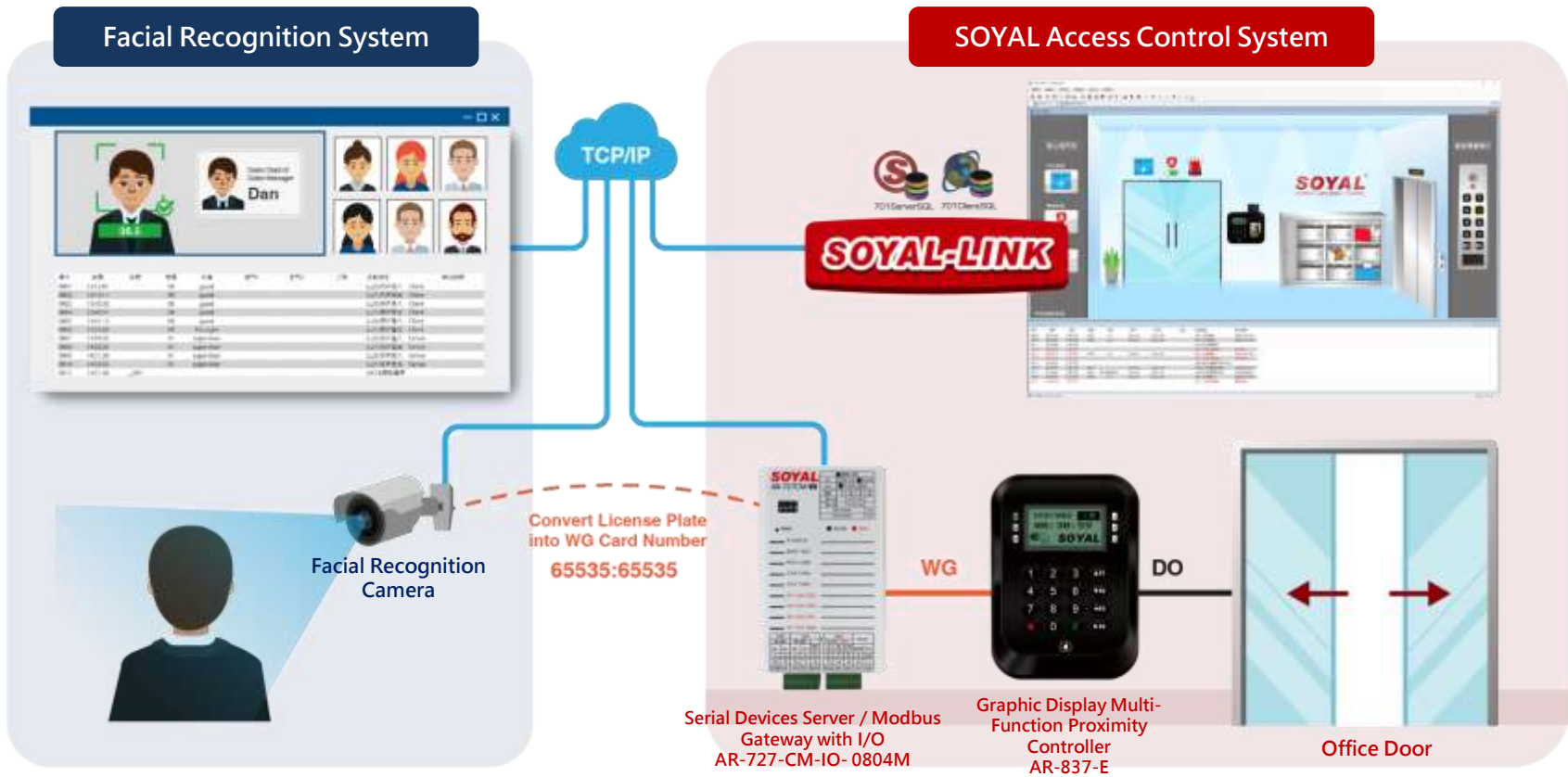
SOYAL supports XML command that be used for the 3rd facial recognition system to integrate with SOYAL access control system; it can send 6 data including user name/ TagID / User number/Access Mode/Department / Facial picture to SOYAL 701ClientSQL software.





Facial Recognition System + Access Control System

IP based facial recognition camera can be integrated with SOYAL TCP/IP to WG Converter AR-727-CM-IO that can convert facial data to Wiegand card number; once the facial recognition is succeeded, the result can be sent to SOYAL controller to open the door.





Visitor Appointment Platform

Visitor Appointment Platform + Access Control System

SOYAL supports Json commands that can be used by the visitor appointment platform to send command to access control device through 701ServerSQL software, each visitor can obtain a temporary pass credential such as QR Code, RFID card, PIN code etc. that allow the visitor to access specific doors and lift within limited time.

Visitor Appointment Platform



```

Card ID"TagUID": "0x00000000057B235"
Start Date / Time "Begin_dt": "2021-5-11 00:00"
End Date / Time "End_dt": "2021-6-18 23:59"
Available Floors "Lift": "0x3A5B67DE",
Available Door "DoorAccess": "0x00FF",
Password "PIN": 1111
    
```



SOYAL Access Control System

