SOYAL®

Iron Series
AR-321-H
Access Controller

Full zinc alloy and touch keypad
with illuminated blue background

Anti-Vandalism
It is designed to prevent damage and destruction on controller when force open or breaking the controller is occuring, it will remain at its place.

3 Bi-Color(BLUE&RED) LED

Soyal
LED 1   LED 2   LED 3

LED 1 arming & disarming/standby mode (BLUE)
LED 2 power ON (BLUE)
LED 3 access granted (BLUE) / abnormal event: access denied & alarming (RED)

Corrosion Resistance
No worry about corrosion from chemical and harsh weather, it will not corrode and change shape.

Glow in the Dark
Considering its design, we made not only strong controller but touch keypad controller with blue background panel.
AR-321-H blue touch panel backlight will offer you access in the dark to be doable.

Full Sealed Protection
Fully sealed with waterproof strip, double layer of PVC on its back housing and hard zinc alloy on its front housing make it durable controller for extreme weather and environment.

Features

| Illuminated Touch Panel | Alarming for Abnormal Event | In-Field Firmware Upgrade | Arming and Disarming | Watchdog | Anti-Passback |

Web   Youtube

- 125kHz or 13.56MHz Access Controller Built-in Hardware Watchdog & Real Time Clock Function
- Standalone / Networking / Support Cascade Structure
- Support RS485 communication encryption, SSC (Soyal Security Communcation)
- In-Field Firmware Upgrade
- Arming / Force Alarm / Unclose Alarm
- Use '#' as a replacement of doorbell button
- Duress Code & Output
- Multi Operation Mode
- Multi Output: Door lock output (0.1-600 sec. and toggle mode) & alarm output (1-600 sec.)

- Silent Operation Mode: Push Button and All Mute
- Support One and Half Door, and One and Half Door Anti-Passback
- Auto Open Time Zone: Built in 2 time zones, with Control Panel up to 63 time zones.
- Assign user for Door Group (up to 254) and Time Zone (up to 11, with control panel up to 63)
- Holiday Edit Up to 120 days a year
- Auto Relock for Anti-Trailing and Sneaking
- Access control, lift control, time attendance, payroll, and SCADA: graphic monitoring & remote control function

SPECIFICATION

Communication interface	Host	RS485/9600 bps (N, 8, 1)	
	Serial	UART PORT (Output only)/4800 bps (N, 8, 1) SSC (Soyal Security Communication)	
Frequency		125kHz	13.56MHz
Supported Tags		ISO18000-2: EM4001 and EM4095 compatible	ISO 14443 Mifare Ultralight, Classic, DESFire NFC (card simulation)
Crypto		――	CC Certification: 3DES Crypto comply with EAL4+
RFID Reading Range		3-7 CM	1-3 CM
		*Reading range will be shorter in metal surface installation. The solution is to add 2CM distance or layer between the wall and the controller.	
UID Bits		24~32 (Adjustable)	
DI/DO	DI	Egress / Door State	
	RO	Door Lock Relay	
	DO	Door Lock Output / Duress Output / Alarm Output Arming Output (share same terminal with Security trigger signal Output)	
Doors/Floors Number		1.5 Doors / 32 Floors	
User Capacity		3000	
Event Log		1500	
Indicator	LED	3 Bi-Color(BLUE&RED) LED	
	Buzzer	1	
TAMPER		Limit switch (1 Form C/ 1000mA / 30VDC)	
Dimension (mm)		114(H)X78(W)X33(D)	
Housing Material	Housing	Zinc Alloy	
	Keypad	Illuminated Touch-Panel / Invisible Keypad Function	
Color		Chrome	
Weight (g)		approx. 290	
Power Consumption		<3W	
Power Voltage		9-24VDC	
Ingress Protection		IP56	
Enviroment	Operating Temperature	-20℃ ~ +70℃	
	Storage Temperature	-40℃ to +75℃	
	Operating Humidity	0%~90% (non-condensing)	
	Storage Humidity	0%~95% (non-condensing)	

WHAT WE OFFER

High Durability
Each Soyal material is made with finest material that meet RoHS compliance and Industrial Grade, provides you a high durability hardware that works well in every environment.

Anti-Cloning and Anti-Duplicate
We provide anti-cloning and encryption for the whole system to tighten up the security. By this mean, only tags paired to AR-321-H and as well as access reader can have access, other than that we don't even recognize the tags.

Expandable User Capacity
When scaling your system it is not only having more hardware, higher security level, and more spaces to control; it also mean there will be more people with access. Without replacing or changing installed hardware, adjust your controller user capacities by adding external Multi-Door Controller; from a thousand to more than ten thousand user capacity.

Beyond Access Controller
Each product manufactured by Soyal was made for total solution and to offer flexibility. For intense, Soyal main product is access controller but you can found Soyal on other application like offline consumption device, charging device, and many more just by changing its firmware.

No Exclusivity, Open Integration Resources
SOYAL provides open resources such as SDK and protocol document that have 'no-exclusivity and open source integration' characteristic, compatible with other system integration. We offer integration with SOYAL software or directly with SOYAL hardware. For web based, SOYAL protocols can easily corresponding to JSON interface that is suitable for GraphQL and Julia developer.

INSTALLATION(mm)

78 mm
57 mm
78.5 mm

(Front View)

33 mm
114 mm

(Side View)
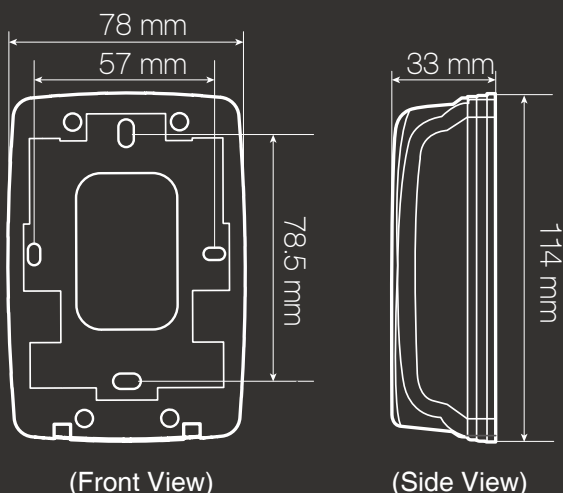
HOW TO ORDER

AR-321-HXR1111-TM

Frequency
B=125kHz / D=13.56MHz

RTC
R=Built-in RTC

Communication
1=RS485

Waterproof
1=Weatherproof

Housing Material
M=Metal Housing (Zinc Alloy)

Keypad Selection
T=Keypad Touch Panel

Type
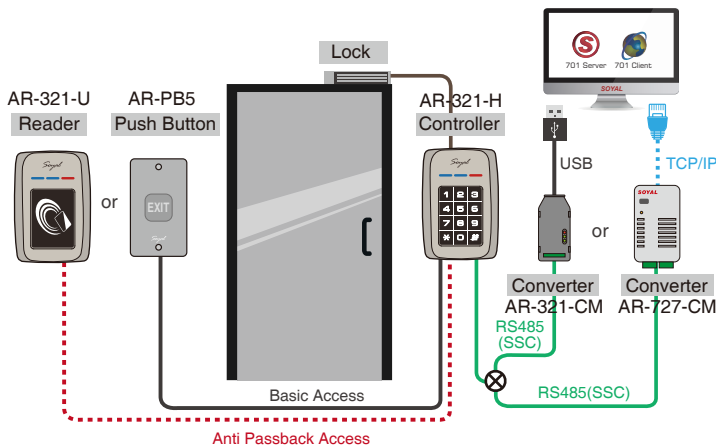1=Standard

Color
1=Silver(Chrome)

APPLICATION & STRUCTURE DIAGRAM

● STANDALONE & NETWORKING ACCESS CONTROL

Basic Access: the most basic access, exiting venue is only by pressing a push button

Anti Passback: restrict user to re-enter before exiting venue or increase security level by having access reader at the other side of the door. Both entering and exiting will required swipe card or keyfob for access.
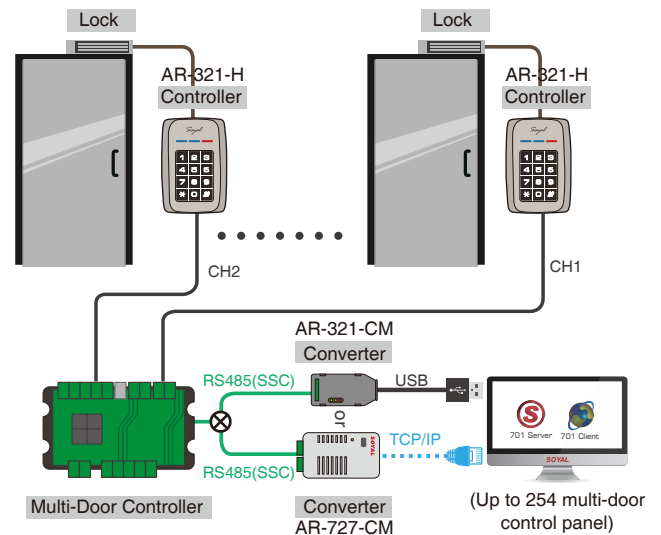
Netwoking: beside configuration through Wiegand Keyboard and Master Card, you can also link AR-321-H with Soyal converter to PC for configuration via SOYAL Software or for anti-cloning and encryption process.

AR-321-U Reader — AR-PB5 Push Button — Lock — AR-321-H Controller — USB — TCP/IP — Converter AR-321-CM — Converter AR-727-CM — 701 Server / 701 Client

or

RS485 (SSC) — RS485(SSC)

Basic Access

Anti Passback Access

--3000 User, 11 Timezone--

● CASCADE STRUCTURE

Upgrade user capacity without replacing AR-321-H installed with additional hardware of SOYAL Multi-Door Control Series.
Under Multi-Door Control Panel, when RS485 communication is working normally, AR-321-H will be a Slave Reader of Control Panel.
Once its communication is cut off, AR-321-H will automatically be Access Control and have control on its user and parameter setting.

Lock — AR-321-H Controller — CH2

Lock — AR-321-H Controller — CH1

AR-321-CM Converter — RS485(SSC) — USB — 701 Server / 701 Client

Multi-Door Controller — RS485(SSC) — TCP/IP — Converter AR-727-CM

(Up to 254 multi-door control panel)

--16000 User, 63 Timezone--

● SOYAL CONTROLLER AS CHARGING STATION

It is applied for temporary power charging in parking lots of community center, commercial building, shopping mall and other private or public spaces.
The cards can be used for charging devices at different time and different parking spaces.
Swipe card to start charging and swipe again after you finished.
This function is applicable for all H and E/H-V5 series controller with custom firmware.
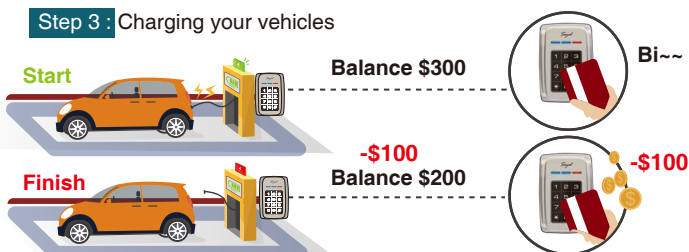
Step 1 : Format authorized device & prepare to do tag pairing

AR-837-EE (as stored value controller) — RS485 (SSC) — Mifare Key — USB — AR-725-P

Step 2 : Adding or deducting value on authorized device (standalone)

+$300
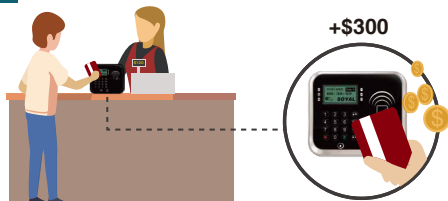
Step 3 : Charging your vehicles

Start — Balance $300 — Bi~~

-$100
Finish — Balance $200 — -$100

● STRENGTHEN SECURITY WITH BURGLARY SYSTEM

● **Arming Output:** Silently send signal to security host when force open door event is occuring
● **Duress Output:** In case an assailant or robber ambush at the entrance and force you to open the door or disarm the system, try to keep calm and input Duress code to open the door, which will simultaneously send a silent alert to security host.
● **Tamper Output:** When controller is removed illegally from the wall, the tamper switch will bounce and trigger alarm. At the same time send signal message to SOYAL 701 Client Software and send loud signal with additional flare alarm honk.

Arming Output

Lock

SOS Duress Output

AR-321-H Controller

SOS

Tamper Output
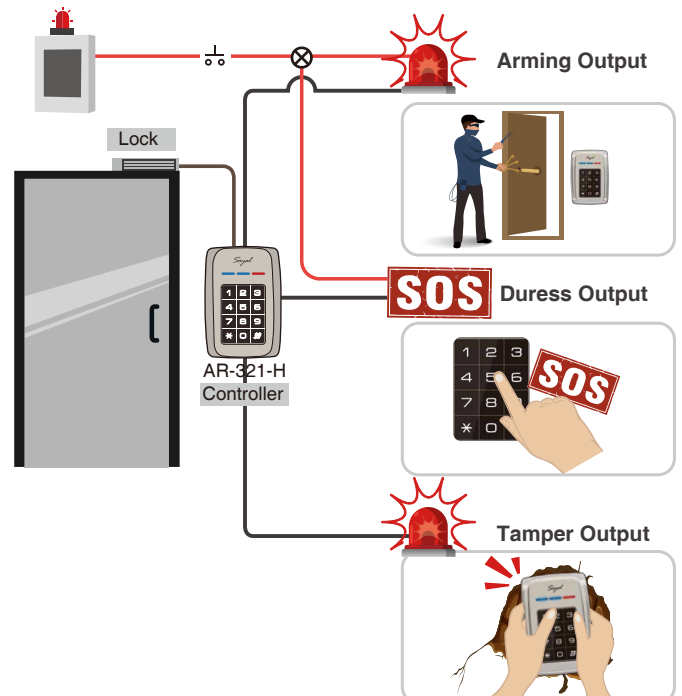
PERIPHERALS / ACCESSORIES

HIGH LEVEL SECURITY

● Anti-Cloning Kits

Mifare Encryption
Encoder: AR-725-P
w/Authorization Tags
Software: Mifare Key

Desfire Encryption
Encoder: AR-837-P
w/Authorization Tags
Software: 323D Master

● Expansion I/O Control

I/O Modules
AR-401 Series:
Multiple Channel I/O Module
AR-403 Series: Tiny Digital I/O Module

STANDALONE

● Input/Output

Locks
Magnetic Lock
AR-0600M-270
Electric Bolt Lock
AR-1207 Series
Cabinet Lock
AR-1211-P/AR-1213-P
Electric Strike
AR-YS-130NO/AR-YS-131NO

**Door Sensor / Alarm/Siren /
Burglary Security System**

AR-321-H

NETWORKING

● Software

701 Server 701 Client

ISP Tools

**File Based & Data Based Interchangeable
Software for Access Control, Time Attendance ,
Status Monitoring and Configuration**
701 Server & 701 Client

Firmware Upgrade
ISP Tools

● Signal/Interface Converter

**Isolated USB
to RS-485**
AR-321-CM
**Isolated RS232
to RS485**
AR-321-CM-485232

Ethernet to RS485
AR-727-CM
AR-727-CM-IO-0804M
(with I/O for Fire Alarm to
open all doors)

TTL to RS-485
For external module
converter

● Large User Capacity & Multi-Door AntiPassback
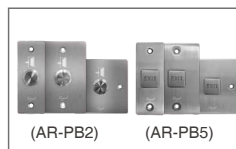
Multi-Door Control Series
AR-716-E16: 16 Doors IP Control Panel
AR-716-E18: 18 Doors Networking Control Panel

● Iron Series

(AR-327-E) (AR-323-D)

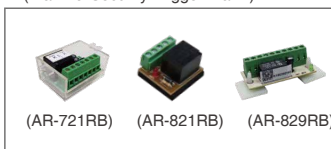(AR-PB2)   (AR-PB5)

**IP Based LCD Access
Controller**
AR-327-E
Smart Digital Door Lock
AR-323-D

**Stainless Steel Push
Button**
AR-PB2 & AR-PB5 Series

● External Relay Output
(Alarm & Security Trigger Alarm)

(AR-721RB)   (AR-821RB)   (AR-829RB)

1 Form C relay with time delay
AR-721RB
1 Form C relay
AR-821RB
2 Form C relay
AR-829RB

● Necessary

Power Supply
BP-W12-1500 (1.5A)
BP-W15-2400 (2.4A)

Proximity Tags
125kHz: EM
13.56MHz: Mifare Classic, Mifare
Desfire, UltraLight
Tags Selection: Thin Card, Thick
Card, Round Keyfob,Square
Keyfob

FAQ

Q: **How to Integrate SOYAL with Face & License
Plate Recognition?**

A: As Face Recognition is more and more in demand,
SOYAL provide resources and two integration method.
The integration will grant access via face recognition by
sending converting face data to UID to Soyal system
(software/hardware) that later will resulting in access
granted or denied, based on the availability user data on
Soyal database system.
As the integration method is various, we offer flexibility of
integration based on what customer preferred.

Q: **What is the difference betweeen SOYAL H Series
and E Series Controller?**

A: SOYAL access controller classified into two categories in term of
specification; H Series and E Series.
SOYAL H Series controller has already include all basic
standalone and networking access controller that you need. But E
series controller provide what H Series controller has already have,
and more advanced features like built in more user capacity, UART
Port for extension module, and extension interface like Ethernet
and POE.

More FAQ