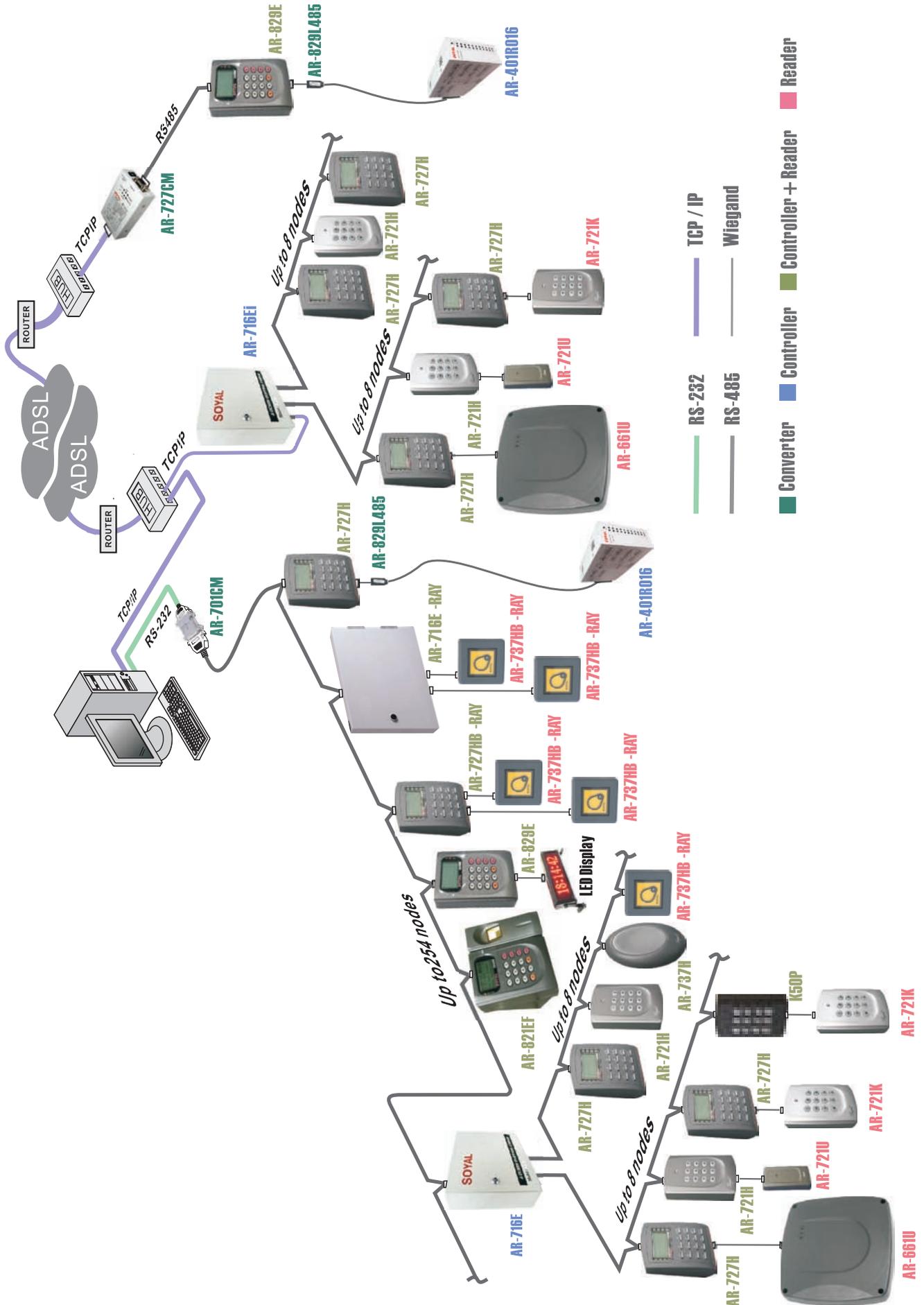


RAYTEL ACCESS CONTROL PRODUCTS

helping to make communities safer



SYSTEM ARCHITECTURE

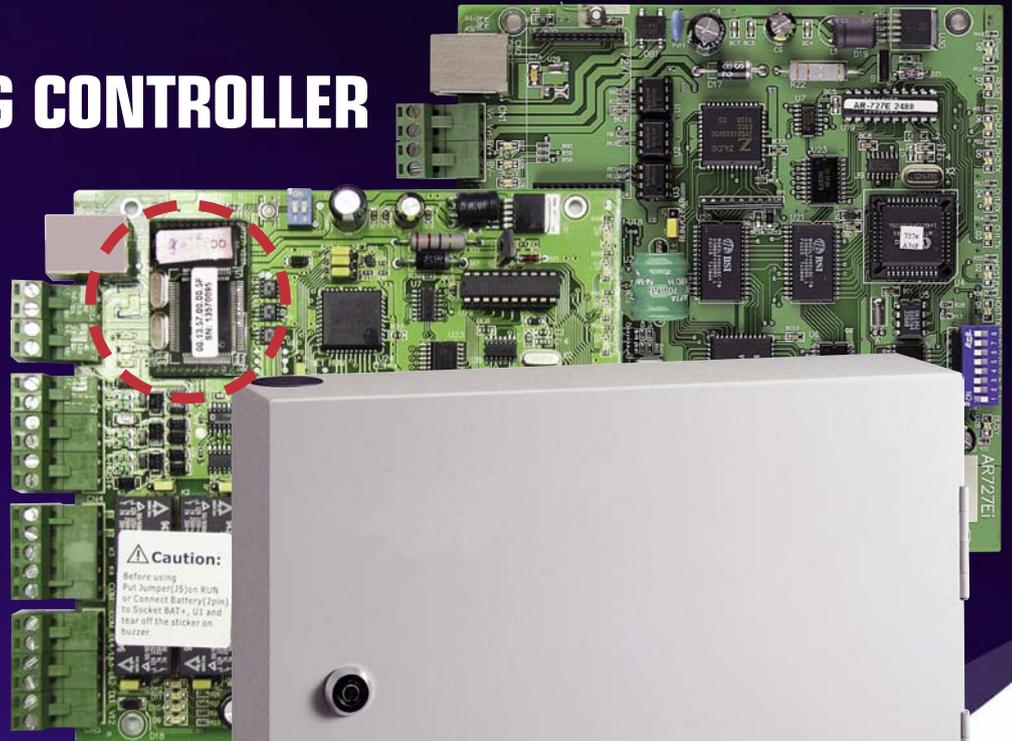


Type No.	Application	Page
AR-716E	Four - Sixteen Door Master Controller	2/3
AR-727HB-RAY	Two Door Controller (RS485)	4/5
AR-727H	Single Door Controller/Reader with LCD (Wiegand)	6/7
AR-721H	Single Door Controller/Reader without LCD (Wiegand)	8/9
K50i	Single Door Keypad Controller	10/11
AR-721KP-B	Two Adjacent Door Keypad Controller	12/13
AR-821EF	Single Door Fingerprint Controller/Reader (Wiegand)	14/15
AR-401E	Programmable Controller	16/17
AR-721U	Wiegand Reader	18/19
AR721KBX	Wiegand Reader/Keypad	18/19
AR-737U/H	Wiegand/RS485 Reader	18/19
AR-661U	Long Range Wiegand Reader	18/19
AR-737HB-RAY	RS485 Vandal Resistant Readers	20/21
Various	Converters and Accessories	22/23
AR-PB	Illuminated Piezo Push Buttons	24/25
Various	Electromagnetic Locks	26/27
Profile	Company Profile and Product Range	28/IBC

Please Note

Whilst every effort has been made to ensure the accuracy of this Catalogue at the time of publication, we reserve the right to supply equipment in line with current design specifications and recommend that critical parameters are checked at the ordering stage.

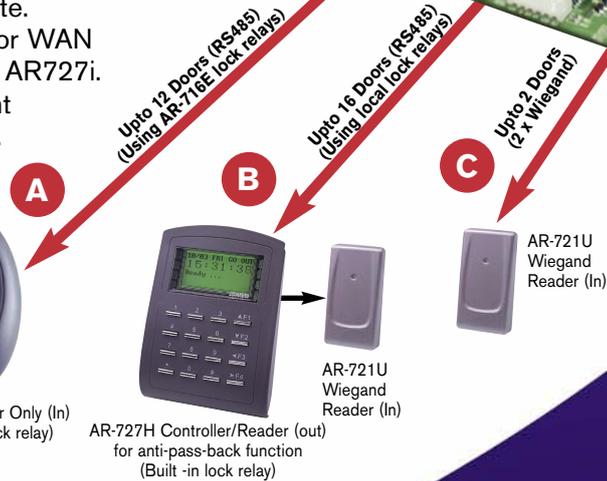
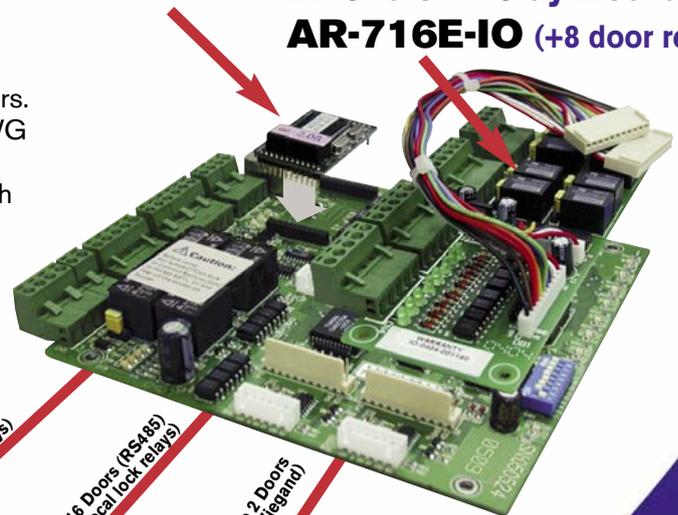
NETWORKING CONTROLLER



Networking Controller AR-716E (4 door relays)

- 2 RS-485 serial ports each port supports 8 readers.
- 2 Wiegand ports which enable connection to 2 WG readers.
- Supports up to 16 doors with reader/controllers with integral relays (12 with reader only) and up to 254 can be linked to a PC host.
- Data retained for 60 days in the event of a power failure.
- Open-all-doors function for emergency purposes.
- Built-in power and RS-485 transmission LED indicator for signal state.
- Ethernet interface for LAN or WAN networking with addition of AR727i.
- Built-in watchdog to prevent the system from locking up.
- Multi-door anti-pass-back.

Serial Device Network Module AR-727i Extension Relay Board AR-716E-IO (+8 door relays)



Options
A or B+C



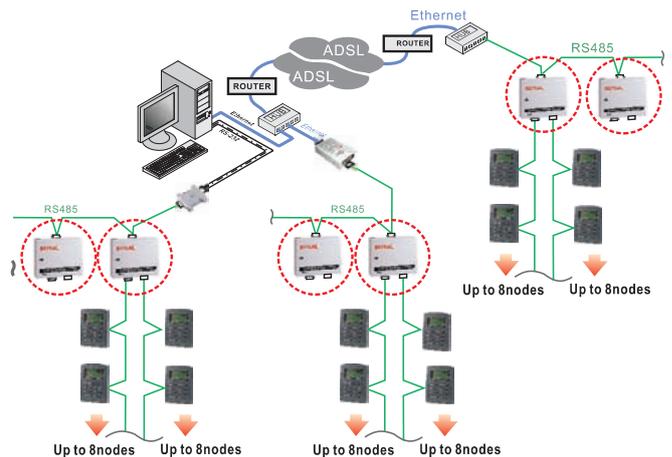
AR-716E/AR-716Ei

*AR-716Ei = AR-716E + AR-727i



Specification	
User Capacity	15,000
Event log	11,000
Power Requirement	15-24VDC
Power Consumption	< 2.5W
Communication Interface	Reader Channel: RS485 x 2 Host Channel: RS485 / Ethernet
Baud Rate: RS485	9600 bps (N, 8, 1)
Baud Rate: Ethernet	10M
Environment	-20°C to +75°C
DI Input Max. Quantity	4+8 (AR-716E-IO)
Relay Output / Max. Quantity	7A 30VDC / 4+8 (AR-716E-IO)
Max. RS485 Reader Supported	16
Max. WG Reader Supported	2
Anti-pass Back	Yes
Door Group	255
Time Zone	63
Editing Mode	PC Software
Dimensions (mm)	180(H) x 231(W) x 62(D)
Weight (g)	1,840 ± 50
Housing Material	Metal
Others	UPS Function (No Battery Included)

System Architecture



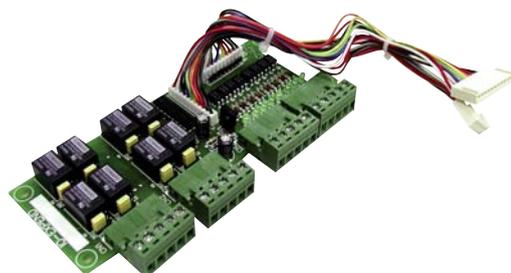
Serial Device Network Module AR-727i



- Built-in Ethernet and TTL serial interface.
- TCP/IP, DHCP, ICMP and ARP supported.

Specification	
Converting Interface	10 Base T Ethernet - UART (TTL)
Baud Rate	4800bps - 57600bps
Power Requirement	5VDC
Power Consumption	< 0.5W
Environment	-20°C to +75°C
Protocol	TCP/IP, ICMP, DHCP
Dimensions (mm)	45(H) x 28(W) x 14(D)
Weight (g)	15
Housing Material	-

Expanding Relay Board AR-716E-IO (+8 Door)



RS485 TWO DOOR CONTROLLER

With built in programming reader.

Networking & Stand-alone Controller for Card or Token Proximity Reader

AR-727HB-RAY

- 1 RS485 port for 2-door control.
- Upto 254 controllers may be networked to host PC.
- Cable runs up to 1,000 meters between controller and reader.
- Built-in reader and LCD display for programming purposes.
- User friendly programming.
- Two built-in lock relays.
- Anti-tamper contact.
- Built-in watchdog to prevent the system from locking up.
- Anti-passback memory 1024.
- Event log (capacity 1,200) preserved for up to 10 years.
- Weatherproof.



The AR-727HB-RAY is an extremely versatile controller/reader operating either as a standalone controller or as a network controller as one of up to 254 controllers operating via an RS485 connection to a host PC.

The RS485 port of the AR-727HB-RAY can be connected to two remote RS485 readers to provide entry control for two doors with exit buttons for egress or for one door with two readers for anti-passback. The RS485 connection enables long cable runs (up to 1000 metres) to be used between reader and controller.

The controller has a built-in proximity reader and LCD display for programming. It is also available in a lockable metal case complete with a 3 amp power supply (AR-716E-RAY).

The readers that can be used with this controller are the AR-737H and the DDA compliant AR-737HB-RAY. There are two lock relays in the controller.

Note: This controller cannot be used as a sub-controller connected to the standard AR-716E



RAYTEL SECURITY SYSTEMS



RS485 TWO DOOR CONTROLLER

With built in programming reader.

AR-727HB-RAY

Networking & Stand-alone Controller for Card or Token Proximity Reader

- Stand-Alone • Networking • 125K • 150K
- Weatherproof

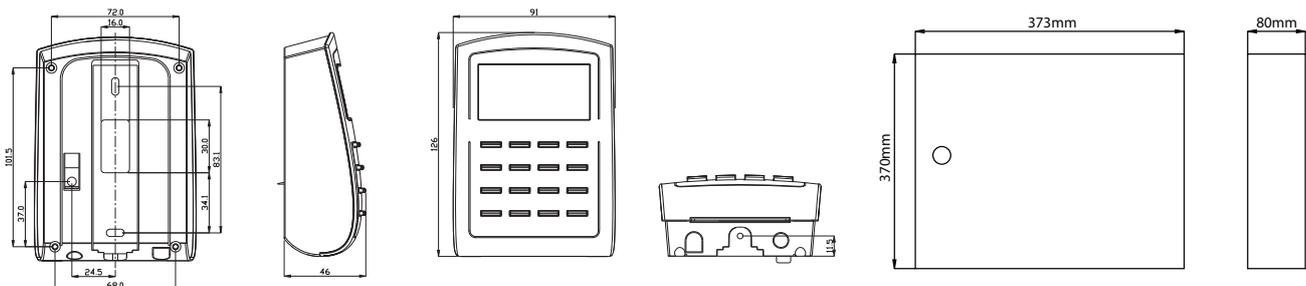
Specification	
Mode No.	M4 (Stand-alone or Networked)
RF Frequency	125KHz / 150KHz
User Capacity	1,024
Event Log	1,200
Voltage	10-24VDC
Power Requirement	< 3W
Communication Interface	RS485
Baud Rate	9600bps (N, 8, 1)
Environment	-20 to +75°C
DI Input	2 Egress Button
DO Output	Arming LED / 2 Door Relay Output
Door Relay / Time	3A 30VDC / 0-600 sec max.
Anti-pass-back	Yes
Program Interface	Controller / PC Software
Proximity Reading Range	5-8cm (125KHz) / 5-8cm (150KHz)
Weatherproof	IP54
Real Time Clock	Yes
Colour	Dark Pearl Grey
Dimensions (mm) AR727HB-RAY	126(H) x 91(W) x 46(D)
Weight (g) AR727HB-RAY	330±10
Housing material	ABS
LCD Panel (pixel)	128 x 64 (4 line messages 16 characters each line)



AR-727HB-RAY or AR-716E-RAY Options

- Standalone controller with two readers and two exit buttons for control of two doors without anti-passback facility (Readers: 2 x AR-737H or 2 x AR-737HB-RAY).
- Standalone controller with two readers for control of one door with anti-passback facility (Readers: 2 x AR-737H or 2 x AR-737HB-RAY).
- One of up to 254 controllers as network node connected to a host PC, with the same reader options as in standalone mode.

Dimensions: AR-727HB-RAY and AR-716E-RAY



AR-737HB-RAY Readers



See RS485 Readers page for reader dimensions.

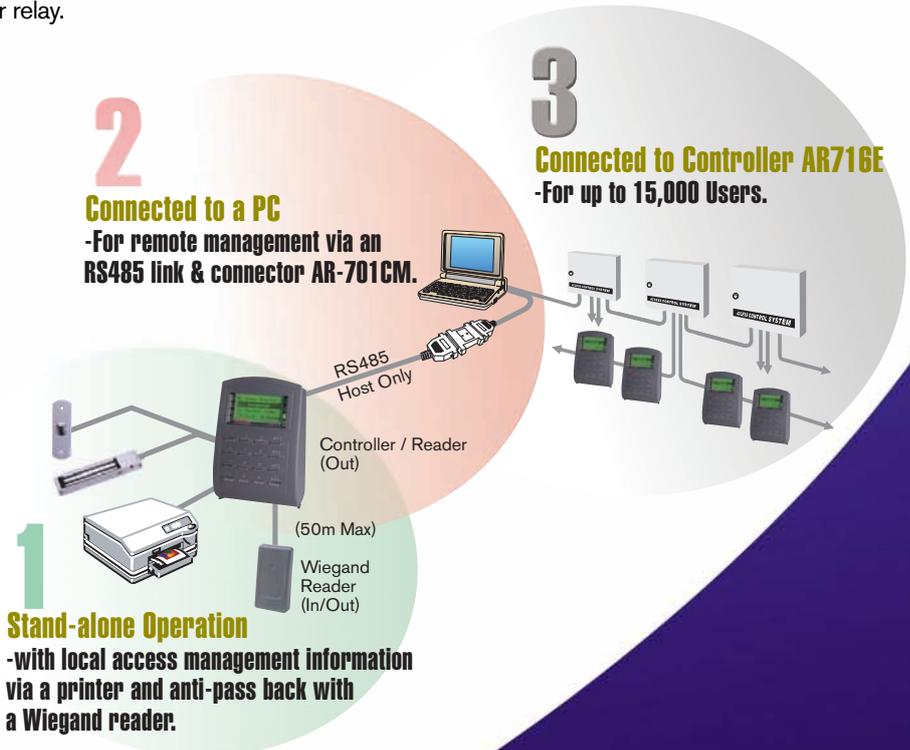
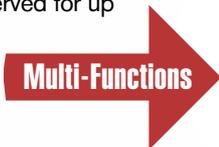
WIEGAND CONTROLLER + READER

Networking & Stand-alone Controller
Networking Reader

AR-727H (125K/MIFARE)



- Controller with built-in reader and door relay.
- Weatherproof for external installation.
- User friendly editing interface supported by LCD panel.
- TTL serial port for connecting external printer, LED etc.
- One built-in lock relay.
- Built-in anti-tamper function.
- Built-in watchdog to prevent the system from locking up.
- An extra WG port which enables connection to another WG reader (for exit or anti-pass-back).
- Easily integrated with Soyal or other access control systems.
- Event log preserved for up to 10 years.



Networking & Stand-alone Controller Networking Reader

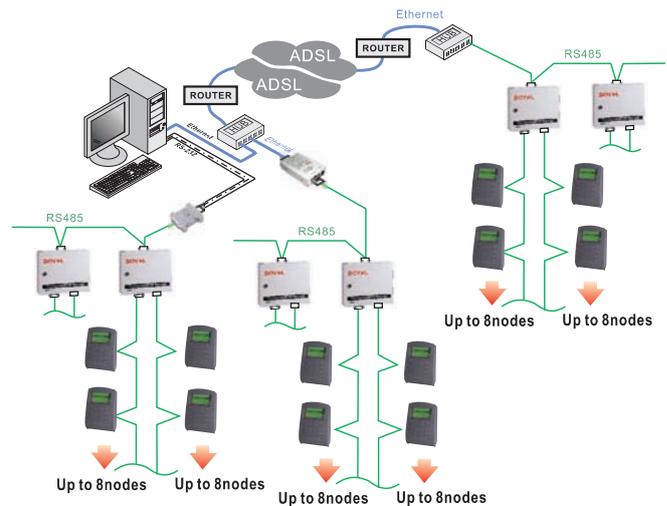
- Stand-Alone • Networking • 125K • Mifare
- Weatherproof

Specification			
Mode No.	M4 (Stand-alone or Networked)	M6 (Stand-alone)	M8 (Stand-alone or Networked)
RF Frequency	125KHz / 13.56MHz		
User Capacity	1,024	65,536	1,024
Event Log	1,200	-	1,200
Power Requirement	10-24VDC		
Power Consumption	< 3W		
Communication Interface	RS485		
Baud Rate	9600bps (N, 8, 1)		
Environment	-20 to +75°C		
DI Input	Egress Button / Door Sensor / Arming Switch		
Compliance	ISO14443A (13.56M only)		
Door Relay / Time	3A 30Vdc N/O, N/C, COMM / 0-600 sec max.		
Alarm Relay / Time	3A 30Vdc N/O, N/C, COMM / 0-600 sec max.		
Tamper Resist. Switch	Limit Switch (From C)		
Aux. WG Port	WG 26/34, ABA-II, OMRON		
Anti-pass Back	Yes	-	Yes
Lift Control	(32 Stops, 1024 users)	-	(32 Stops, 1024 users)
Editing Interface	Controller / PC Software	Controller	Controller / PC Software
Proximity Reading Range	10-18cm (125K) / 3-8cm (13.56M)		
Serial Out	TTL (4800bps, N, 8, 1)		
Colour	Dark Pearl Grey / Navy		
Dimensions (mm)	126(H) x 91(W) x 46(D)		
Weight (g)	200±10		
Housing material	ABS		
LCD Panel (pixel)	128 x 64 (4 line messages 16 characters each line)		
Access Mode	Card Only Card or PIN ** Card + PIN	Card Only Card or PIN Card + PIN	Card Only Card or PIN Card + PIN

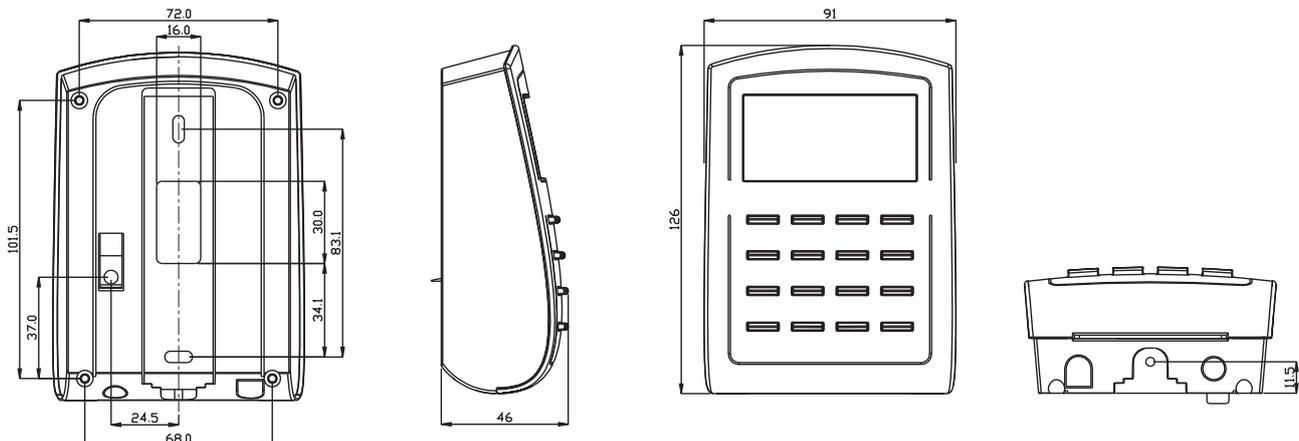
** Under M4, the PIN here actually refers to User Address + PIN which is designed to improve security by asking users to key in their individual user address prior to PIN.



System Architecture



Dimensions



See Wiegand Reader page for reader dimensions.

WIEGAND CONTROLLER + READER

Networking & Stand-alone Controller Networking Reader

AR-721H (125K/MIFARE)

- Controller with built-in reader and door relay.
- 11 sets of time zone, different time zone for each user.
- Up to 120 holidays that can be set in a year starting from the editing date.
- TTL serial supported for connecting an external printer, LED etc.
- Built-in anti-tamper function.
- Built-in watchdog to prevent the system from locking up.
- An extra WG port which enables connection to another WG reader (for exit or anti-pass back only).
- Easily integrated with Soyal or other access control systems.
- Event log saved for up to 10 years.

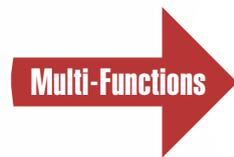


2

Connected to a PC
-For remote management via an RS485 link & connector AR-701CM.

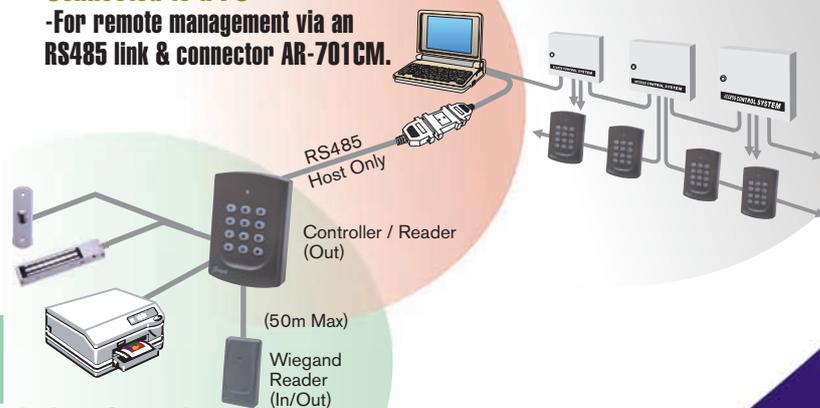
3

Connected to Controller AR716E
-For up to 15,000 Users.



1

Stand-alone Operation
-with local access management information via a printer.



Networking & Stand-alone Controller Networking Reader

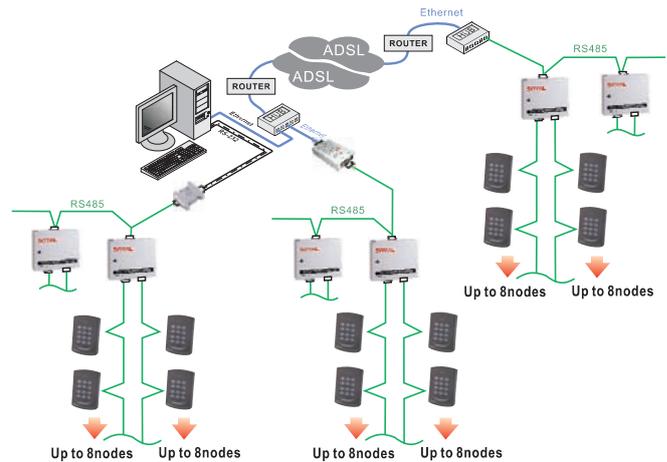
• Stand-Alone • Networking • 125K • Mifare

Specification			
Mode No.	M4 (Stand-alone or Networked)	M6 (Stand-alone)	M8 (Stand-alone or Networked)
RF Frequency	125KHz / 13.56MHz		
User Capacity	1,024	65,536	1,024
Event Log	1,200	-	1,200
Power Requirement	9-16VDC		
Power Consumption	< 3W		
Communication Interface	RS485		
Baud Rate	9600bps (N, 8, 1)		
Environment	-20°C to +75°C		
DI Input	Egress Button / Door Sensor		
Compliance	ISO14443A (13.56M only)		
Door Relay / Time	2A 30VDC N/O, N/C, Comm / 0-600 sec Max		
Alarm Relay / Time	Transistor Open Collector / 0-600 sec Max		
Tamper Resist. Switch	Limit Switch (From C)		
Aux. WG Port	WG 26/34, ABA-II, OMRON		
Anti-pass Back	Yes	-	Yes
Lift Control	(32 Stops, 1024 users)		(32 Stops, 1024 users)
Editing Interface	Controller / PC Software	Controller	Controller / PC Software
Proximity Reading Range	10-18cm (125K) / 3-8cm (13.56M)		
Serial Out	TTL (4800bps, N, 8, 1) (shared with alarm relay)		
Indicator	A bi-colour LED and a beeper		
Colour	Dark Pearl Grey (Silver - special order only)		
Dimensions (mm)	111(H) x 77(W) x 26(D)		
Weight (g)	100±10		
Housing material	ABS		
Access Mode	Card Only Card or PIN ** Card + PIN	Card Only Card or PIN Card + PIN	Card Only Card or PIN Card + PIN

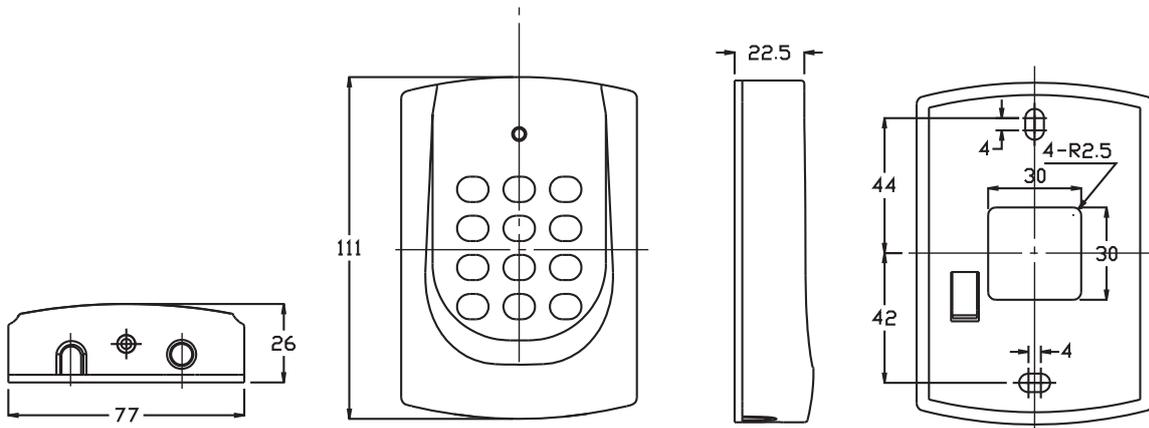
** Under M4, the PIN here actually refers to User Address + PIN which is designed for more security by asking users to key in their individual user address prior to PIN.



System Architecture



Dimensions



SINGLE DOOR KEYPAD ACCESS CONTROLLER

Networking & Stand-alone Keypad Access Controller **K50i Series**

- Programmable Common Code or Individual User Codes
- Standalone or Networkable
- RS 485 port for PC Host
- Anti-pass back with slave Wiegand keypad AR-721KBX
- Event Log
- Tamper switch
- Duress Code
- Adjustable Alarm and Door Relay Times
- Waterproof to IP65
- Real Time Clock
- Standard or Vandal Resistant Format
- AC/DC operating voltage 9-16 volts



The K50i series Access Controller is a fully encapsulated controller with a robust, engraved metal keypad and either a plastic cover for surface mounting or a stainless steel vandal resistant case for surface mounting and a stainless steel front plate that fits onto a standard double gang electrical back box for flush mounting.

The unit has three modes of working, M4, M6 and M8 with M8 being the default mode. In the default mode, M8, the unit memory can hold up to 1024 codes. The event log can hold 1200 events. Anti-pass back can be accomplished by connecting a Wiegand keypad, AR721KBX to the K50i. The controller can be used in standalone mode with or without anti-pass back or, in network mode, connected to a PC host by means of an RS485 link.

The controller electronics and keypad are fully encapsulated to IP65. It also has a built-in door relay plus an alarm relay. A duress code can also be programmed into the unit.

SINGLE DOOR KEYPAD ACCESS CONTROLLER

K50i

Networking & Stand-alone Keypad Access Controller

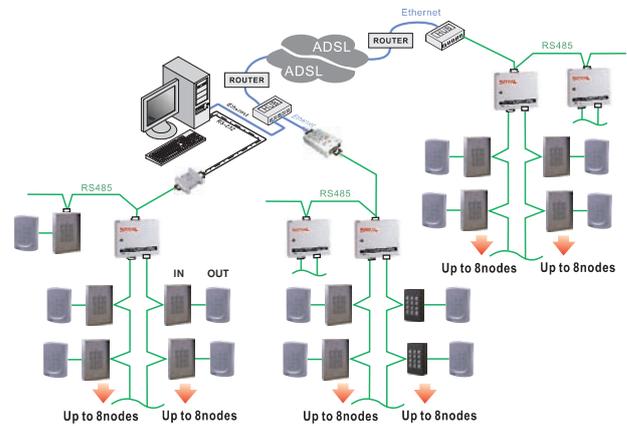
Specification			
Mode No.	M4	M6 (Stand-alone)	M8*
User Capacity	1,024	65,536	1,024
Event Log	1,200	-	1,200
Access Mode	Networkable or Stand-alone 5 Digit User address + 4 Digit Individual Passcode	Stand Alone Only 4 Digit Common Code	Networkable or Stand-alone 4 Digit Individual Passcode *Default
Supports	Stand-alone / Networking		
Power Requirement	9-18V AC/DC		
Power Consumption	< 3W		
Communication Interface	Host Connection RS485		
Baud Rate	9600bps (N, 8, 1)		
Environment	-20°C to +75°C		
DI Digital Input	Egress Button + Door Sensor		
DO Digital Output	1 Door Relay Output 3A 5PCO		
Transistor Output	Duress / Alarm / Arming LED		
Door Relay / Time	2A 30VDC / Toggle or 0.1-600 sec		
Anti-pass Back	Yes with Wiegand keypad AR-721K		
Alarm Relay / Time	Toggle or 1-600 sec		
Tamper Resist. Switch	Limit Switch (From C)		
Serial Out	TTL (4800 bps, N, 8, 1)		
Waterproof	IP65		
Indicator	A bi-colour LED and 1 buzzer		
Colour	Dark Pearl Grey		
Dimensions (mm)	PBT only: 114(H) x 65(W) x 28(D) Metal Box: 150(H) x 83(W) x 50(D)		
Housing material	PBT Keypad Housing Metal Box: 316 Stainless Steel		

• Stand-Alone

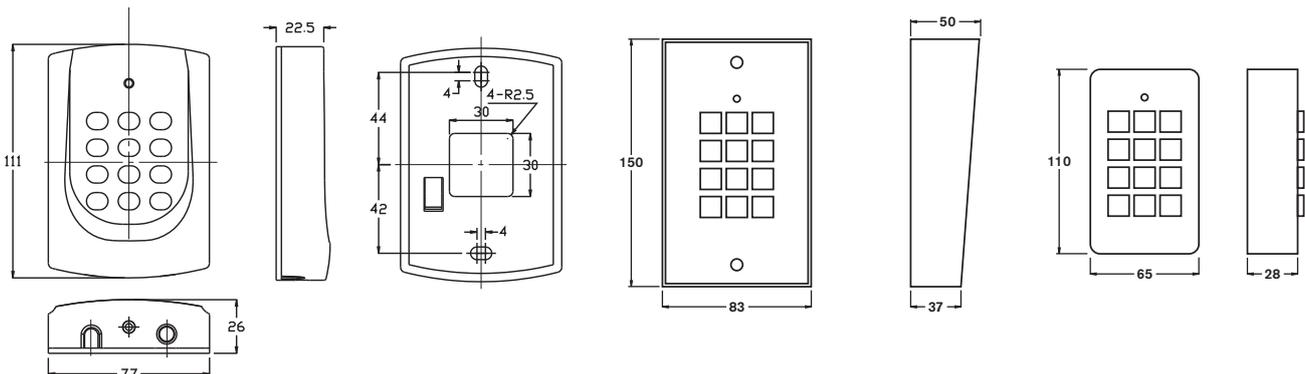


K50i Versions	
Complete Keypad	Equivalent to Previous Model
K50P - Plastic Surface Mount	K50
K50F - Steel Flush Mount (Requires double gang flush box, ordered separately)	K50S
K50CS Steel Surface Mount (Purchase K50F & K51S)	K50C
To add K50i to panel, use suffix /K	Suffix /K

System Architecture



Dimensions



TWO ADJACENT DOOR KEYPAD ACCESS CONTROLLER

**Standalone Keypad Access Controller
for 2 Adjacent Doors or 1 Door plus
Door Bell (#)**

AR-721KP-B

- Standalone Keypad Access
- Two Relays
- 500 Codes (3-6 DIGITS)
- Bi-colour LED and SOUNDER
- Adjustable Relay Times
- Operating Voltage 9-18v AC/DC
- Tamper Resistant Switch



The AR-721KP-B Access Controller is a stand-alone keypad with a 500 code memory and a bi-colour LED and sounder.

The codes can each have between 3 and 6 digits. The unit has two relays that can be used for one door plus a door bell function using # as a bell push. The two relays can also be used to give access to two adjacent doors with half of the codes allocated to each relay. This is the default setting but all of the codes can be programmed to operate one relay only.

The unit is provided with a tamper resistant switch and is built into a dark grey ABS case.

Stand-alone Keypad Access Controller

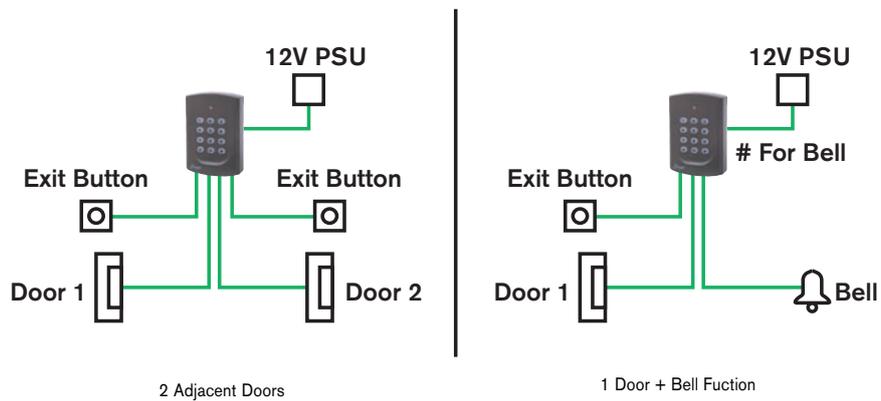
• Stand-Alone

Specification

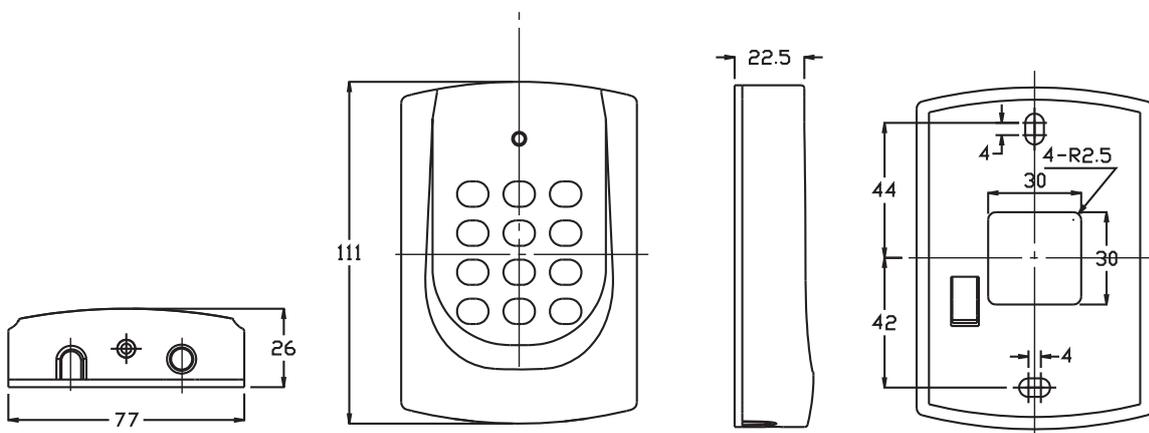
User Capacity	500 codes
Passcode	3-6 digit
Power Requirement	9-18V AC/DC
Power Consumption	< 2W
Supports	Stand-alone
Memory	EEPROM
Environment	-20°C to +75°C
DI Digital Input	Egress Button + Door Sensor
DO Digital Output	2 Door Relay Output (User Address 000-249 active Relay 1)* (User Address 000-249 active Relay 2)* *Default
Door Relay / Time	3A 30VDC / 0, 0.1-600 sec
Alarm or 2nd Door Relay / Time	3A 30VDC / 0, 1-600 sec
Tamper Resist. Switch	Limit Switch (From C)
Indicator	A bi-colour LED and 1 buzzer
Colour	Dark Pearl Grey
Dimensions (mm)	111(H) x 77(W) x 26(D)
Weight (g)	100±10
Housing material	ABS



System Architecture



Dimensions



WIEGAND CONTROLLER + READER + FINGERPRINT DEVICE

Networking & Stand-alone Controller
Networking Reader
Fingerprint Identification Device

AR-821EF (125K)



- Fingerprint capacity up to 1,450
- Short response time for fingerprint identification
- Backup storage of fingerprints, passwords and ID cards.
- High fingerprint recognition rate, FAR=0.0001%, FRR=0.01%. (By taking several copies of each fingerprint, the recognition rate for smoother prints, as with older people is greatly enhanced).
- Supports fingerprint database downloading & uploading from/to PC.
- User (card) capacity up to 10,000.
- Dual function for access control and time attendance systems.
- User friendly editing interface supported by LCD panel.
- Networking controller function, also directly editable through software.
- Built-in watchdog to prevent the system from locking up.
- An extra WG port which enables connection to another WG reader (for exit or anti-pass-back only).



Networking & Stand-alone Controller Networking Reader Fingerprint Identification Device

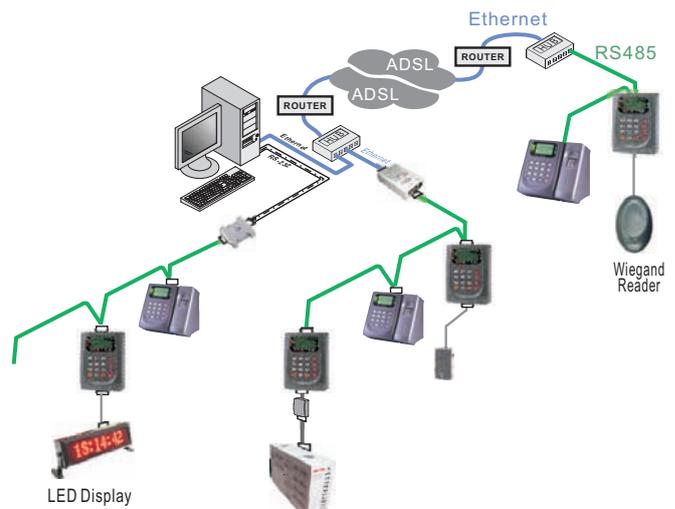
• Stand-Alone • Networking • 125K

Specification	
RF Frequency	125KHz
User Capacity	10,000
Event Log	11,000
Power Requirement	10-24VDC
Power Consumption	< 5W
Communication Interface	RS485 / Ethernet (option)
Baud Rate	9600 bps (N, 8, 1)
Environment	-20°C to +75°C
Compliance	ISO14443A (13.56M only)
Door Relay / Time	3A 30VDC N/O, N.C, Comm / 0-600 sec Max
Alarm Relay / Time	3A 30VDC N/O, N.C, Comm / 0-600 sec Max
Aux. WG Port	WG 26/34, ABA-II, OMRON
Door Group	255
Time Zone	63
Editing Interface	Controller / PC Software
Proximity Reading Range	8-15cm
Colour	Dark Pearl Gray / Silver
Dimensions (mm)	132(H) x 144(W) x 102(D)
Weight (g)	460±10
Housing material	ABS
LCD Panel (pixel)	128 x 64
	(4 line messages, 16 characters each line)
Access Mode - Check FP	Fingerprint Only **
Access Mode - No Check FP	Card Only / Card or PIN / Card + PIN
Fingerprint Sensor	Photo
Resolution	500DPI
Fingerprint Scan Area (mm)	16 x 18
FAR	< 0.0001%
FRR	< 0.01%
Response Time	1.2 sec
Matching Mode	1 : N : 1 : 1
Fingerprint Capacity	1,450

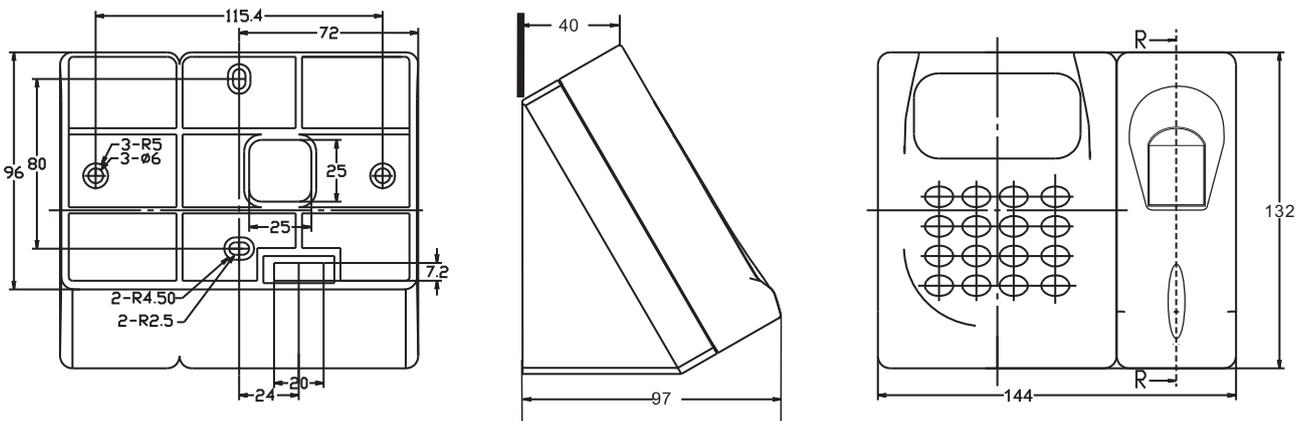
** When "Check Fingerprint" function is enabled, FP checking would always be in the highest priority which surpasses other requirements. Although the user is asked to use card or/and PIN to access, as long as his (her) fingerprint is identified, he (she) is still allowed to access.



System Architecture



Dimensions



PROGRAMMABLE CONTROLLER

2 Channel Processor Module

AR-401E

16-Channel Digital
Input Module

AR-401DI16

16-Channel Relay
Output Module

AR-401RO16



- Distributed Control.
- Reducing Wiring Costs.
- Reduced Installation Time.

2 Scan Channel Processor Module

AR-401E

16-Channel Digital Input Module

AR-401DI16

16-Channel Relay Output Module

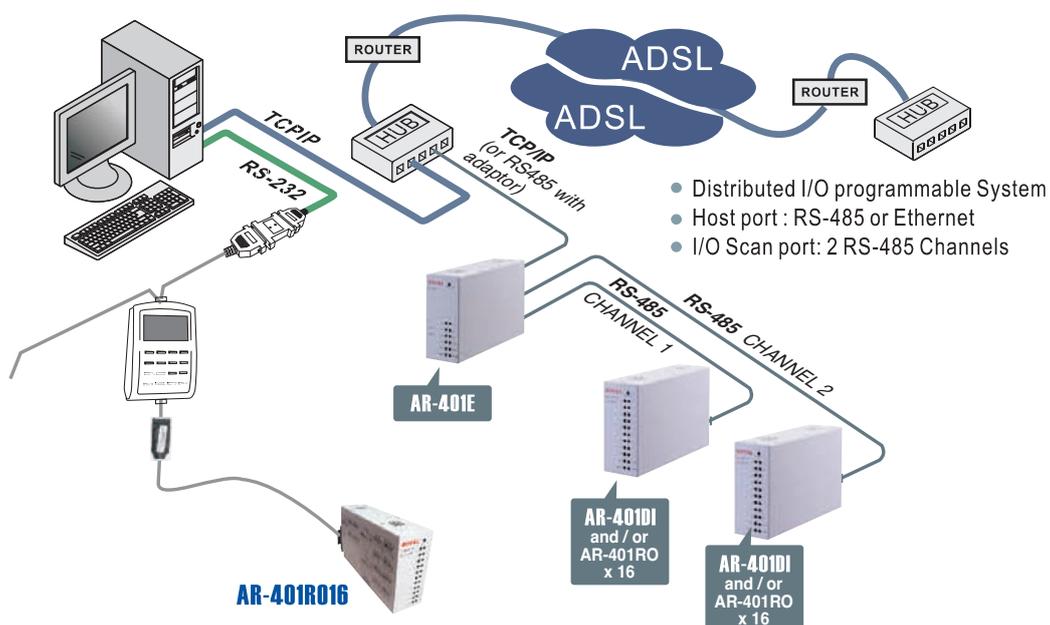
AR-401RO16



The AR-401E, together with its sub-modules AR-401DI16 and AR401R016, is a programmable controller that provides an optimum solution for both access control and industrial applications in either centralised or distributed system architecture. It provides input-output event control via user friendly programming tools that include timer functions. It also fulfils PLC requirements for access control systems.

Specification			
Model No.	AR-401E	AR-401DI16	AR-401RO16
Event Log	10,000	-	-
Power Requirement	9-24VDC		
Power Consumption	1W		12W
Communication Interface	RS-485 / Ethernet (optional)		
Baud Rate - RS-485	9600bps / 19200bps (N, 8, 1)	4800bps / 9600bps / 19200bps (N, 8, 1)	4800bps / 9600bps / 19200bps (N, 8, 1)
Baud Rate - Ethernet (optional)	10M		
Channels / Inputs / Outputs	2 RS-485 Scan Channel, 1 RS-485 for Host (removable for Ethernet Mode)	16 Contact input (Sink, N. C. type)	16Form C Clean Contact Relay Output 3A 30VDC
LED Indicator	Power, Tx / Rx	Power, Tx / Rx, Input Close / Open / Break	Power, Tx / Rx, Relay On / Off
Data Capacity	8M Bytes SRAM Memory 60 Days Memory Backup	-	-
Remote IO Capacity	512	-	-
Virtual IO Capacity	512	-	-
Sequential Steps	2048	-	-
Real Time Clock	Yes	-	-
Dimensions (mm)	97(H) x 44(W) x 180(D)		
Weight (g)	600±50		
Housing material	Metal		

System Architecture (AR-401E/401DI16/401RO16 & PC)



WIEGAND READERS

Wiegand Reader

AR-721U (125K)

AR-721KBX (125K/MIFARE)

AR-661U (125K)

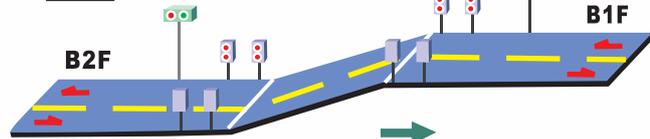
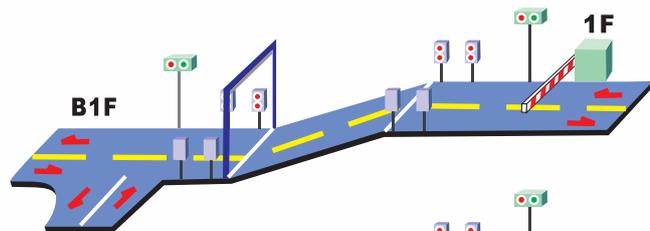
Wiegand / RS-485 Reader

AR-737H/U (125K/MIFARE)

- Various programmable output formats WG26/34, ABA-11, ASYNC & OMRON.
- Anti-pass-back available, depending upon system configuration.
- Built-in watchdog to prevent the system from locking up.
- Easily integrated with Soyal or other access control systems.



PARKING



Multi-door
Anti-pass-back



LIFT CONTROL

FC CE
SOR MA

Wiegand Reader **AR-721U**

(Card / Token)
• Networking • 125K • Waterproof

Wiegand Reader **AR-721KBX**

(Card / Token + PIN)
• Networking • 125K • Mifare

Long-Range Wiegand Reader **AR-661U**

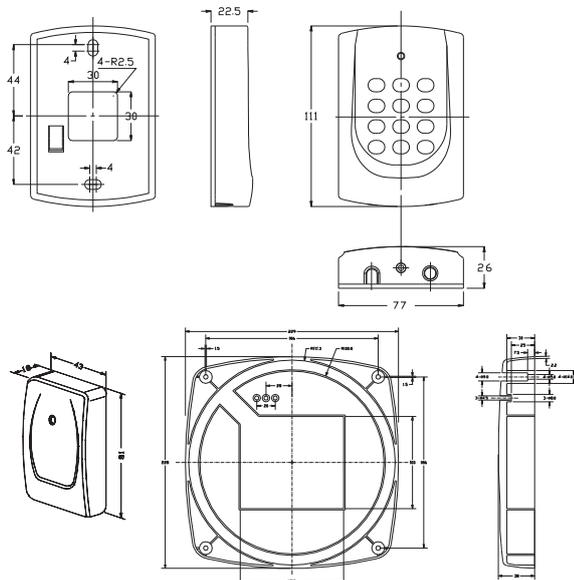
(Card / Token)
• Networking • 125K
• Waterproof



Specification			
Mode No.	AR-721U	AR-721KBX	AR661U
RF Frequency	125KHz	* 125KHz / ** 13.56MHz	125KHz
Power Requirement	9-16VDC		
Power Consumption	50mA	* 80mA ** <1W	350mA
Communication Interface	WG 26/34, ABA-II, ASYNC, OMRON		
Baud Rate	9600bps (N, 8, 1)		
Environment	-20°C to +75°C		
Proximity Reading Range	3 - 8cm	* 10 - 18cm ** 3 - 8cm	33 ~ 60cm
Indicator	Bi-colour LED and a beeper	Bi-colour LED and a beeper	Three LED's and a beeper
Keypad	No	Yes	No
Waterproof	*** Yes	No	Yes
Colour	Dark Pearl Grey	Silver	Dark Pearl Grey
Dimensions (mm)	80.5(H) x 43(W) x 18(D)	111(H) x 77(W) x 26(D)	228(H) x 229(W) x 38(D)
Weight (g)	40±5	90±10	1,000±50
Housing material	ABS		

* 125KHz Version. ** 13.56MHz Version. *** BX3221

Dimensions



Wiegand / RS-485 Reader **AR-737H / AR-737U**

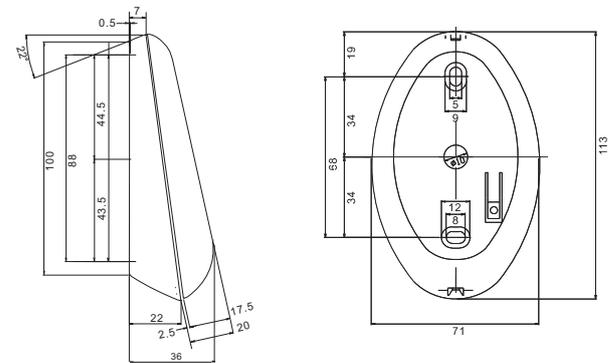
• Networking • 125K • Mifare
• Waterproof



Specification	
RF Frequency	* 125KHz / ** 13.56MHz
Power Requirement	* 9-16VDC / ** 9-24VDC
Power Consumption	< 1.5W
Communication Interface	RS485 (737H only), TTL Wiegand (737U only) and OMRON
Baud Rate	9600 bps / 19200 bps (N, 8, 1)
Environment	-20°C to +75°C
Compliance	ISO14443A (13.56M only)
Proximity Reading Range	* 12-20cm / ** 3-8cm
Read / Write	* Read Only / ** Read / Write
Supported Tags	* EM4001 / EM4012 Compliant ** Mifare Ultra Light (L10) ** Mifare Standard (S50) ** Mifare Plus (P60)
Indicator	A Bi-coloured LED and a beeper
Waterproof	Yes
Colour	Dark Pearl Gray
Dimensions (mm)	113(H) x 71(W) x 36(D)
Weight (g)	80±10
Housing material	ABS
Door Relay	Use AR-821RB-18

* 125KHz Version. ** 13.56MHz Version

Dimensions



RS485 READERS

For Cards or Tokens

AR-737HB-RAY

VR-RAY-S

VR-RAY-F

- High Visibility Front.
- Raised Token Logo.
- RS485 communication Interface.
- Up to 1000metre Cable Run.
- Waterproof.
- Stainless steel Vandal Resistant Housing available.
- Bi- colour LED and Sounder.
- EM4001/EM4012 compliant tokens.
- Power Requirement <1.5w
- Operating Temperature: -20 to +75°C.
- Standard Colour: Pearl grey with yellow and black front.
- Output for local lock relay

The DDA compliant AR-737HB-RAY RS485 proximity reader for card or token is available in standard and vandal resistant versions for surface or flush mounting.

The AR-737HB-RAY proximity reader has been designed to operate with Controller AR-727HB-RAY or Master Controller AR-716E via an RS485 link to enable cable runs of up to 1000 metres to be used between controller and reader. This reader has a high visibility/contrast yellow and black front with raised token logo to assist visually impaired people. It has a built-in LED and sounder to indicate acceptance or rejection of a token/card. The reader is available in standard form for mounting directly on a wall or similar surface with a clip-on protective cover. Although the reader is waterproof and fairly robust, it is recommended that the terminals at the rear are protected from condensation with a silicone sealant. The reader can also be provided with a vandal resistant stainless steel case for surface (VR-RAY-S complete) or flush mounting (VR-RAY-F complete). Both VR versions use a standard single way, 35mm deep, metal, electrical back box.

This reader operates in a similar way to AR-737H in that it has an output that can be used to operate a local lock relay if this is preferred to using the lock relays in the Controller.

Note: Diodes should always be fitted across the lock inputs in accordance with best practice.



RAYTEL SECURITY SYSTEMS 

Specification	
Mode No.	AR-737HB-RAY Specification
FR Frequency	125KHz / 150KHz
Power Requirement	<1.5W
Voltage	9-16VDC
Communication Interface	RS-485
Baud Rate	9600 bps (N, 8, 1)
Operation Temperature	-20°C to +75°C
Proximity Reader Range	5-8cm(125KHz) / 5-8cm(150KHz)
Supported Token	EM4001 / EM4012 Compliant
Indicator	1 bi-colour LED and 1 beeper
Waterproof	Yes
Dimension (mm)	65(L) x 65(W) x 18.5(H) 60(L) x 60(W) x 18.5(H)
N.W. / G.W. (g)	80±10 / 110±10
Housing Material	ABS

Colour Zones

In those cases where customers require different levels of access for members of staff, the controllers can be programmed to give different levels of access to the proximity cards or tokens. The plastic cover for the proximity reader for each area can be supplied in a colour equating to a particular level of access. Those tokens giving access to an area should be fitted with a self-adhesive label of the same colour as the reader cover.

Four additional colour zones are offered as standard but more could be made available to special order.

Where proximity ID cards are used, the colours for the zones could be included in the printing of the cards.



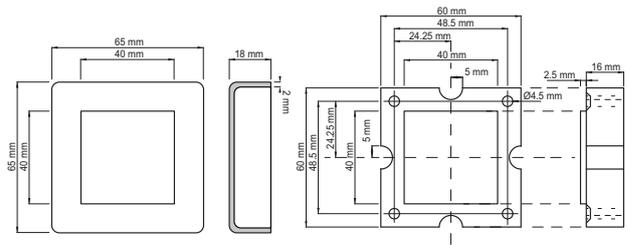
Proximity Reader (Card / Token) AR-737HB-RAY

- Networking
- Waterproof
- ABS



See Accessories Page for Colour Zone ordering information.

Dimensions

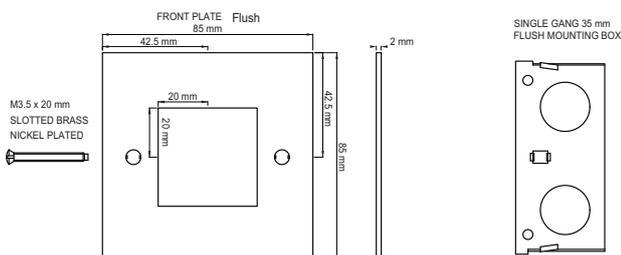


Proximity Reader (Card / Token) VR-RAY-F

- Networking
- Waterproof
- Vandal Resistant
- Flush Mounting



VR-RAY-F Dimensions

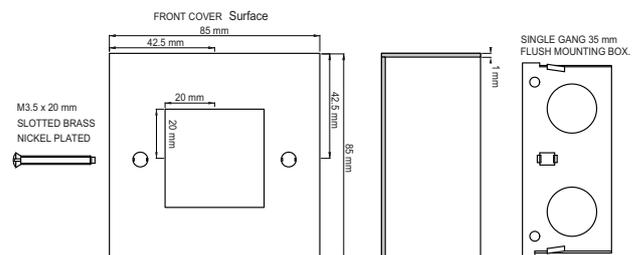


Proximity Reader (Card / Token) VR-RAY-S

- Networking
- Waterproof
- Vandal Resistant
- Surface Mounting

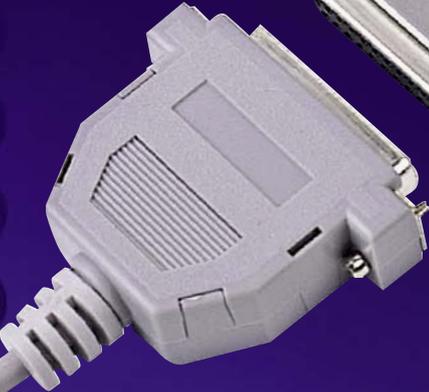


VR-RAY-S Dimensions



CONVERTERS & ACCESSORIES

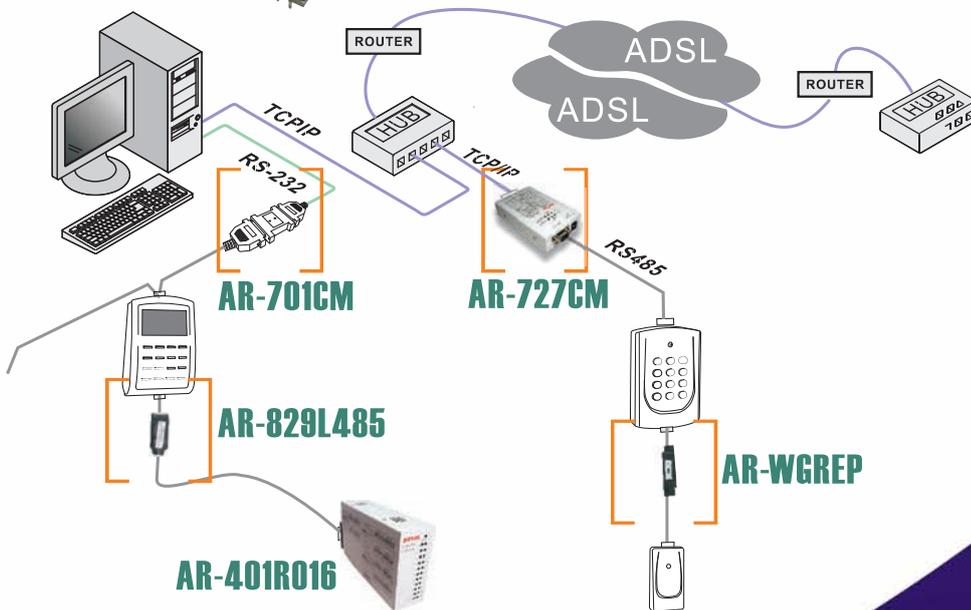
Isolated RS-232 / RS-485
Converter
AR-701CM



Serial Device Network Module
AR-727i



Serial Device Network Server
AR-727CM



Serial Device Network Server AR-727CM



- Built-in RS-232, RS-485 & Ethernet interface (AR-727i module).
- Built-in power and data transmission LED indicator for signal state.
- With software on CD-Rom.

Specification	
Model No.	AR-727CM
Converting Interface	10 Base T Ethernet / RS-232, RS-485
Baud Rate	4800bps - 57600bps
Power Requirement	9-24VDC
Power Consumption	<2W
Environment	-20°C to +75°C
Protocol	TCP/IP, ICMP, DHCP
Dimensions (mm)	110(H) x 62(W) x 24(D)
Weight (g)	240±10
Housing Material	Metal

Isolated RS-232 / RS-485 Converter AR-701CM-RAY



- Automatic data direction control.
- RS-232 powered from DTR, RTS (activation needed).
- Upto 32 units in RS-485 multi-door operation.
- Built-in power and data transmission LED indicator for signal state.
- With software on CD-Rom.

Specification	
Model No.	AR-701CM
Converting Interface	RS-232, RS-485
Power Requirement	9-24VDC
Power Consumption	<1.5W
Environment	-20°C to +75°C
Effective Range	2M (RS-232) / 300M (RS-485)
Optical Isolation	2KV
Dimensions (mm)	64(H) x 55(W) x 16(D)
Weight (g)	40±5

Wiegand Repeater AR-WGREP



Specification	
Model No.	AR-WGREP
Power Supply	12VDC / 5-7mA
Input 0-5V	Pulse 100-300µS
Output 0-5V	Pulse 220-420µS

USB to RS-485 Converter AR-701CM-18

- With software on CD-Rom.



Specification	
Converting Interface	USB to RS-485, RS-485 to USB
Voltage	5VDC
Current	Initial 10mA / Hold 15mA
Operation Temperature	-20°C to +75°C
Dimensions (mm)	53(L) x 25(W) x 10(H)
Weight (g)	65

Serial Device Network Module AR-727i



- Built-in Ethernet and TTL serial interface.
- TCP/IP, DHCP, ICMP and ARP supported.

Specification	
Model No.	AR-727i
Converting Interface	10 Base T Ethernet / UART (TTL)
Baud Rate	4800bps - 57600bps
Power Requirement	5VDC
Power Consumption	<0.5W
Environment	-20°C to +75°C
Protocol	TCP/IP, ICMP, DHCP
Dimensions (mm)	45(H) x 28(W) x 14(D)
Weight (g)	15

TTL to RS-485 Signal Converter AR-829L485



Specification	
Model No.	AR-829L485
Converting Interface	TTL, RS-485
Power Requirement	9-15VDC
Current	120mA
Environment	-20°C to +75°C
Effective Range	300M
Dimensions (mm)	52(H) x 14(W) x 11(D)
Weight (g)	14

Relay Output Module AR-821RB-18



- Relay has 1 Form C contact.
- Positive or Negative Trigger.
- Converts transistor signal to relay output.
- Built-in flywheel diode & contact surge protection.
- Built-in LED indication.

Specification	
Model No.	AR-821RB-18
Voltage	9-18V AC or DC
Output Contact	1 Form C, 7A 30VDC
Current	100mA
Operation Temperature	-20°C to +60°C
Dimension (mm)	20(D) x 31(W) x 47(H)

Zone Colours for AR-737HB-RAY



- A range of colour stickers and matching colour covers to provide users with visual confirmation of 'Access Levels' by matching colour zones.

Token/Key Chain Colour Stickers (sheets of 20 stickers)

AR-Black Sticker	for AR-Token/Key Chain, 20 per Sheet
AR-Red Sticker	for AR-Token/Key Chain, 20 per Sheet
AR-Blue Sticker	for AR-Token/Key Chain, 20 per Sheet
AR-White Sticker	for AR-Token/Key Chain, 20 per Sheet
AR-Grey Sticker	for AR-Token/Key Chain, 20 per Sheet

If using cards we recommend cards are printed with colours to match readers.

Colour Covers (replaces standard grey cover)

AR-Black Cover	for AR-737HB-RAY reader
AR-Red Cover	for AR-737HB-RAY reader
AR-Blue Cover	for AR-737HB-RAY reader
AR-White Cover	for AR-737HB-RAY reader
AR-Grey Cover	Supplied with AR-737HB-RAY as standard

ILLUMINATED PIEZO PUSH BUTTONS

Soyal Illuminated Piezo Push Buttons

AR-PB-8A

AR-PB-6A

- Bi-coloured LED ring indicator.
- Ultra-thin design for surface mounting.
- Waterproof (IP65).
- Built-in over current protection.



The Soyal Illuminated Piezo switch is an elegant, lightweight, wall mounting switch operating on piezo electric technology and with an illuminated bezel surrounding the switch pressel.

The bezel would normally be illuminated in red, changing to green when the switch is pressed e.g. as an exit button. The AR-PB-8A has been designed to fit either directly to a wall or to a single way electrical back box and the AR-PB-6A has been designed to fit directly onto a narrow door frame.

Illuminated Piezo Push Button AR-PB-6A

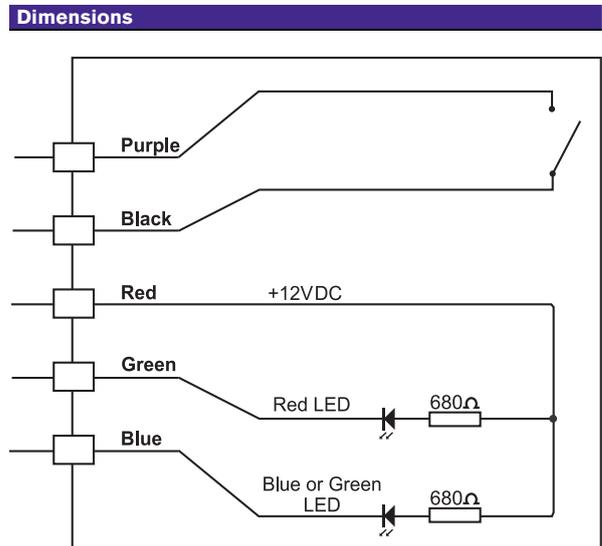


Specification				
Features	Description	min	typical	max
Switch Type	Normally Open (N/O)			
Input Voltage	DC 5-24V	5	12	24
Switch Current	100mA		100mA	
On resistance		10Ω	15Ω	25Ω
Off resistance		2MΩ	4MΩ	5MΩ
Protection	Poly switch (Max 24VDC)	150mA	350mA	500mA
Indicator	Red & Blue/Green LED (680Ω serial resistor for each LED)		10mA @12VDC	
Force		110g	200g	1000g
Pulse time	5VDC	50ms	350ms	1000ms
	12VDC	50ms	350ms	1000ms
	24VDC	100ms	120ms	800ms
Housing material	Metallised ABS - chrome finish			

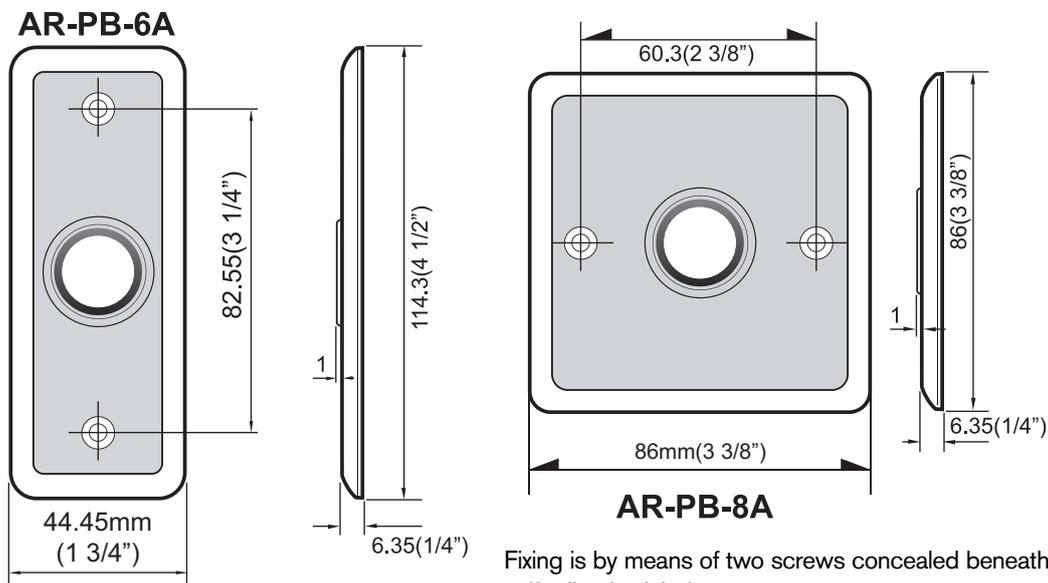
Illuminated Piezo Push Button AR-PB-8A



Wiring				
Red	Black	Purple	Blue	Green
LED Power	Switch Output		LED (Blue / Green)	LED (Red)
+12VDC	COM	N.O. (Open Collector)	Low Active	Low Active



Dimensions



Fixing is by means of two screws concealed beneath a self-adhesive label.

ELECTROMAGNETIC LOCKS

Quality electromagnetic locks and drop bolts in a wide range of sizes and holding forces available for most popular applications.

Selected locks include additional features, such as door monitoring and LED indication as standard.

Mortise / Recessed Mount AR-0600M-R

- 600Lbs / 250Kg Holding force.
- Door monitoring (reed) output.
- 12 or 24 Volt operation.
- Standard size to fit Transom Housings.

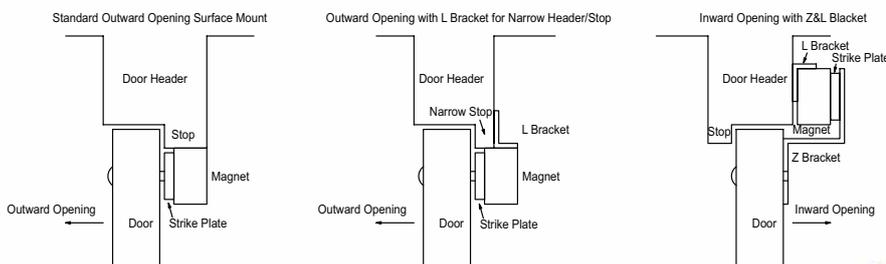


External (Gate) Face Mount AR-1500WF

- 1300Lbs / 600Kg Holding force.
- Stainless steel construction.
- Door monitoring (reed) output.
- 12 or 24 Volt operation.
- 25mm conduit connection.
- Z&L Bracket for inward opening available.
- Surface mount version available.



Surface Lock Install Guide



Surface Mount AR-0600M

- 600Lbs / 250Kg Holding force.
- Compact size.
- Door monitoring (relay) output with LED indication.
- 12 or 24 Volt operation.
- Z&L Bracket for inward opening available.
- Glass mounting bracket available.
- Double version available.



Surface Mount AR-1200M

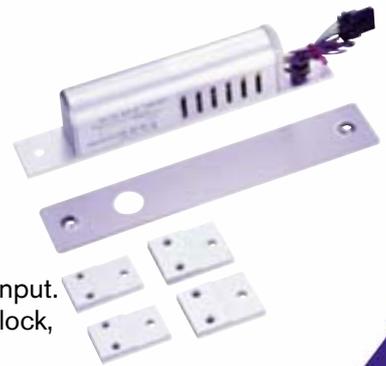
- 1200Lbs / 500Kg Holding force.
- Door monitoring (relay) with LED indication.
- 12 or 24 Volt operation.
- Z&L Bracket for inward opening available.
- Double version available.



Drop Bolt

LK-1201A

- Door monitoring (reed) output.
- Request to open input.
- Auto 5 Second relock, if unopened.
- Delay Time 0, 3, 6, 9 Seconds.
- 12 Volt operation, polarity protected.
- Glass mounting bracket available.



ELECTROMAGNETIC LOCKS

All Dimensions in mm

Specification - Magnet Series						
Standard Single	AR-0090M ●	AR-0200M ●	AR0300M	AR-0600M	AR-0600MR	AR-1200M
Outward / Inward Opening Single Doors Side Mount			 Monitored	 Monitored + LED	 Recessed + Monitored	 Monitored + LED
Magnet Body (mm)	70L x 35W x 20H	160L x 28W x 17H	166L x 38.5W x 21H	251L x 47W x 25H	228L x 38W x 27H	266L x 73.5W x 40H
Strike Plate (mm)	62L x 32W x 9H	130L x 28W x 8H	130L x 32W x 10H	185L x 38W x 12H	185L x 38W x 12H	185L x 61W x 16H
Holding Force (lbs/kg)	80/40	220/110	300/150	600/250	600/250	1200/500
Current Drawn (12V/24V)	200mA/100mA	200mA/100mA	370mA/185mA	400mA/200mA	400mA/200mA	500mA/250mA
Z and L Brackets	N/A	N/A	AR-0300MZL	AR-0600MZL	N/A	AR-1200MZL
Brackets / Conversion Kit	L		166L x 43W x 33H	251L x 51W x 33H		266L x 75W x 48H
	Z		166L x 50W x 43H	190L x 50W x 50H		190L x 72W x 72H
Glass and Narrow Frame	N/A	N/A	AR-0300M-U	AR-0600M-U	N/A	N/A
U Bracket Size			140L x 43W x 28H	190L x 43W x 28H		
Standard Double	AR-0600M-DB			AR-1200M-DB		
Outward Opening Double Doors Side Mount	 Monitored + LED			 Monitored + LED		
Magnet Body (mm)	502L x 47W x 25H			532L x 73.5W x 40H		
Strike Plate (mm)	185L x 38W x 12H (x2)			185L x 61W x 16H (x2)		
Holding Force (lbs/kg)	600/250 (x2)			1200/500 (x2)		
Current Drawn (12V/24V)	400mA/200mA (x2)			500mA/250mA (x2)		
External	AR-400WF ●	AR-0400WS ●	AR-1500WF	AR-1500WS ●		
Outward / Inward Opening Single Doors / Gates	Face Mount  Stainless Steel	Side Mount 	Face Mount  Monitored	Side Mount  Monitored		
Magnet Body (mm)	164L x 35W x 26H	164L x 35W x 26H	203L x 63W x 42H	225L x 65W x 42H		
Strike Plate (mm)	130L x 32W x 10H	130L x 32W x 10H	185L x 61W x 16H	185L x 61W x 16H		
Holding Force (lbs/kg)	400/180	400/180	1300/600	1300/600		
Current Drawn (12V/24V)	370mA/185mA	370mA/185mA	500mA/250mA	500mA/250mA		
Z and L Brackets	N/A	AR-0400MZL ●	AR-1500WF-ZL	AR-1500WS-ZL ●		
Brackets / Conversion Kit	L	164L x 43W x 33H	225L x 72W x 48H	225L x 72W x 48H		
	Z	164L x 50W x 44H	190L x 72W x 72H	190L x 72W x 72H		
U - Glass and Narrow Frame		See AR-0300M-U				
Door Holder	AR-0180M					
Magnet Body (mm)	100L x 38W x 38H					
Strike Plate (mm)	Fitted to adjustable bracket - 75L x 32W x 52H					
Holding Force (lbs/kg)	180/80					
Current Drawn (12V/24V)	200mA/100mA					

Specification - Electric Bolt Series			
Electric Bolts	LK-1201A		LK-1201B ●
Lock Body (mm)	205L x 32W x 43H		
Strike Plate (mm)	104L x 32(25)W x 35H		
Voltage	12VDC ± 10%		 Fail-Safe Type Reed O/P
Current Drawn	Initial 900mA/Hold 380(320)mA		 Relay O/P + LED Indicator
Brackets	LK-1201A-U (Glass/Narrow Frame)		LK-1201A-BR (Mounting Box)
Size (mm)	210L x 22W x 50H	110L x 22W x 50H	210L x 44W x 50H

● Special Order Only

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 email: info@raytelsecurity.co.uk Internet: www.raytelsecurity.co.uk

Company Profile

Raytel Security Systems is a prominent supplier of a wide range of Door Entry, Access Control and CCTV Equipment to the UK Security Industry for both private applications and for public buildings.

Products

The product portfolio of Raytel Security Systems Ltd consists of both Distributed Goods and In-House manufactured products.

The company is the exclusive UK distributor for a number of prominent international manufacturers. These products are combined with the company's own range of products to form a comprehensive range of combined Door Entry and Access Systems.

Systems

Door Entry

Kits – Generally used for simple one door, one to 10 way systems

Sound System – A modular range with electronic chime for functional dial systems, single to multi door, can have functional and digital dial porter switchboards.

Open Voice – A modular range similar to Sound System with open voice units allowing communication between visitor and user with automatic audio switching.

Two-Wire – A modular range generally used for simple digital dial systems up to 200 users and 15 doors, single to multi door, can have digital dial switchboard.

Digibus – A modular range generally used for larger digital dial systems up to 10,000 users and 99 doors, single to multi door and building complex configuration, can have digital dial or PC porter switchboards.

Isolated Systems – A range of central controllers providing fully isolated and integrated door entry and access control solutions, ideally suited for Local Authority, Housing Association and Schools applications.

Access Control

A range of systems from standalone to complete networks to suit most applications.

Automation

A range of swing, sliding and underground systems for domestic and light industrial gates, garage doors, barriers and stop bollards, motors for sun awnings and roller shutters.

CCTV

A range of CCTV equipment is also available (see separate brochure).

We will be pleased to quote and engineer systems to your requirements, please contact our sales departments on the numbers opposite.



Door Entry, CCTV & Access Products



Elegant handsets and monitors.



DDA compliant entrance panels and help points with audio and visual augmentation.



Low voltage automated gate and barrier systems for domestic and light industrial applications

CCTV Equipment

Kits, Handsets & Video Monitors

DDA Panels & Equipment

Door Monitoring Alarms

Functional & Digital Dial Panels

Gates, Barriers & Garage Doors

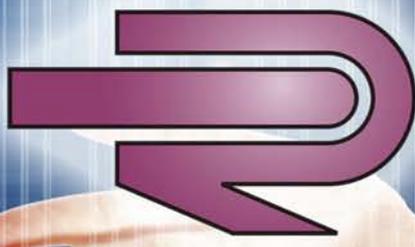
Staff Pagors



Complete CCTV solutions including Cameras, domes, keypads, screens and DVR's



A wide range of Stainless Steel and decorative entrance panels.



Raytel Security Systems

helping to keep communities safer

Manufacturers and suppliers of Door Entry and Access Control systems for more than 25 years.

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A MEMBER OF THE



OF COMPANIES