



Sensormatic®  
Access Control Systems

apC®/L

## Intelligent Access Control and Alarm Monitoring Panel



The apC®/L is an intelligent access control and alarm monitoring control panel which serves as a basic building block for Sensormatic C•CURE® security management systems. It is a two-door version of the popular apC® panel making it an economical solution for parking garages, small office buildings, retail outlets and apartment complexes or for remote site monitoring. The apC/L has many innovative design features which make it more reliable, easier to service and less expensive to own than other intelligent field panels.

The panel is configured with up to 4M EPROM firmware or optional Flash ROM\*, that makes firmware updates quick and easy.

The apC/L supports optional input and output modules that can be added to provide more flexibility for a variety of access control, alarm monitoring, and integrated security applications.

Multiple card reader technologies and card formats can be used on the same apC/L. This makes it ideal for single and multiple tenant applications and for retrofitting existing systems. In addition, the apC/L bus architecture reduces wiring requirements and overall installation costs. In fact, the apC/L can be installed on the same bus as the apC.

The apC/L is designed to provide advanced functionality while not communicating with the host, including, anti-passback control and alarm or event-initiated output activation.

## FEATURES

- Fast, stand-alone processing
- Distributed database processing for up to 20,000 cardholders
- 255 time commands for automatic input, output, and reader mode control
- Support for magnetic stripe, Wiegand, and proximity card technologies
- Card, keypad, or card and keypad access support
- Reader-by-reader support for variable card formats, site codes, company codes, and card technologies
- Class A, 2-wire supervised input capability with optional input modules
- Internal activation and expiration dates for cardholders
- Optional flash memory\*
- Real time full-year clock and calendar
- Dynamic memory allocation between card and events storage
- Software-linked inputs and outputs for offline control
- Communication between host and apC/L through direct connect or dialup mode\*
- Up to 80 hours onboard memory retention in case of power failure
- Integrated alarm control
- Battery backup option
- Network connectivity
- CE Compliant
- UL Listed, 294, 1076

## apC®/L Intelligent Access Control and Alarm Monitoring Panel

### ADVANCED SOFTWARE FEATURES

The apC/L offers many powerful software features such as timed activation and expiration of cards, 32-bit card numbers, and anti-passback control. The apC/L full-year, real time calendar and clock allows activation and deactivation of cards on specified days. The flash ROM option lets you update firmware by downloading it from a host computer.\*

The apC/L also has a power, host communication, and fault indicator LED visible on the front of the panel to aid in system diagnosis.

The panel's static RAM consumes minimal power for storing memory and data.

### ACCESS CONTROL

Multiple card reader technologies and card formats can be used on the same apC/L, including: Wiegand, magnetic stripe, and various proximity cards. With a complete database downloaded from the host, the apC/L responds to access requests in less than one-half second, regardless of the number of readers in the system. When an alarm occurs, the apC/L immediately transmits a signal to the host.

### ALARM MONITORING

Supervised alarm inputs are available through the optional Input Modules. Each Input Module provides eight Class A supervised inputs. The apC/L panel supports up to four Input Modules.

Supervised inputs can be normally open or closed and detects four circuit conditions: short, open, normal, or alarm.

### CARD READER CONFIGURATION

The apC/L can be used in a wide variety of configurations. In its base configuration, up to two card readers can be connected through a single RS-485, 2-wire data bus.

### apC/L MEMORY

The apC/L event storage capacity is automatically adjusted according to the memory required for storing cardholder information. Increasing the number of cardholder records stored decreases the number of events (transactions) that can be held.

Adding optional features may reduce the number of cardholder records and event storage space as the record size increases.

The table below shows a standard apC/L memory configuration of cardholder record-to-event storage based on a 16-byte card record.

#### Card to Transaction Storage

RAM Size	# of Cardholder Records	# of Events (Transactions)
256K	10,000	5,000
	7,500	9,000
	5,000	13,000
512K*	20,000	14,000
	15,000	21,000
	12,500	25,000

\*Contact the factory for expanded capacities.

### apC/L DIALUP MODE

The Dialup Mode is a communication technique that connects an apC/L to a host system using standard telephone lines and modems, instead of hardwired or leased telephone lines.

The Dialup Mode connection exists *only* when communication between the apC/L and host is needed. Connections are usually of short duration and are continuously made and broken, allowing many apC/L devices to share few host I/O ports and telephone lines.

Typically, the host initiates communication with an apC/L to download new data or change the state of a relay or lock output. The apC/L initiates communication with the host to report an important event, such as an alarm, or to transfer data when its memory is almost full. The frequency at which the host dials the apC/L can be adjusted according to the time of day. In addition, each apC/L can be set to a local time different from the host's time regardless of time zone differences.

Dialup features may vary according to the host system.

### NETWORK SUPPORT \*

It is possible to use existing network infrastructures for communication between the apC/L and the host computer. These networks may be Ethernet running either DECNet or TCP/IP. (Due to the variety of network topologies, please contact the Access Control Division Applications Engineering for details on apC/L network connectivity.)

### INPUT MODULE

The Input Module provides eight Class-A supervised inputs. A total of 4 Input Modules can be connected to one apC/L System. Input Modules connect on the card reader bus which greatly reduces wiring.

## OUTPUT MODULE

The Output Module provides an additional eight outputs. A total of 4 Output Modules can be installed on one apC/L System. Output Modules connect on the card reader bus which greatly reduces wiring.

## RM SERIES CARD READERS

The Sensormatic Access Control Division RM Series Card Readers support magnetic stripe, Wiegand, and proximity technologies within a universal housing. Among its many unique features are an LCD display, integral keypad, and audible feedback. The RM card readers provide an additional two supervised inputs and two outputs when used with the ARM-1.

## RM-4 PERSONALITY MODULE

The RM-4 Personality Module creates the connectivity between a magnetic, proximity, Wiegand, or Wiegand-compatible reader and the apC/L. The RM-4 also provides two supervised inputs and two outputs when used with optional ARM-1 Modules.

## ARM-1 AUXILIARY RELAY MODULE

The ARM-1 provides outputs for controlling door strikes or other equipment located at an RM Series card reader. Installation of the ARM reduces wire runs back to the apC/L. Each RM Card Reader and RM-4 Personality Module can support two ARM-1 modules.

## FLASH ROM OPTION

When its time to update your firmware, you can do it quickly and easily using the Flash ROM option. Instead of replacing the EPROM on the mother board of the apC/L, you can simply download new firmware directly to the apC/L from the host computer. (Consult factory for host requirements.) Flash support may vary according to the host system

## BATTERY AND CABLE OPTION

An optional 12 volt, 4 Amp-hour battery is available for the apC/L. If AC power fails, the battery will allow continuous operation by providing up to eight hours of power. The battery mounts inside the apC/L cabinet and comes with a connection cable.

## GENERAL SPECIFICATIONS

### • Power Consumption

Less than 10 Watts typical

### • Temperature Ranges

Operating: . . . 32° to 158°F (0° to 70°C)

Storage: . . . . 9° to 185°F (-25° to 85°C)

Operating and Storage : . . . 32° to 122°F with battery (0° to 50°C)

### • Housing

16 AWG metal wall mounted locking cabinet with tamper switches on door and rear

### • Power Supply

Wall Transformer: . . . . . 120 VAC 60 Hz  
Output 18 VAC at 3.3 Amp max.

### • Auxiliary Hardware

Relay contacts rated at 30 V AC/DC 1 Amp inductive, 2 Amps non-inductive

### • Physical Dimensions

Height: . . . . . 14.00 in. (35.56 cm)

Width: . . . . . 8.00 in. (20.32 cm)

Depth: . . . . . 3.24 in. (8.26 cm)

Weight apC/L : . . . . . 8.25 lbs. (3.71 kg)

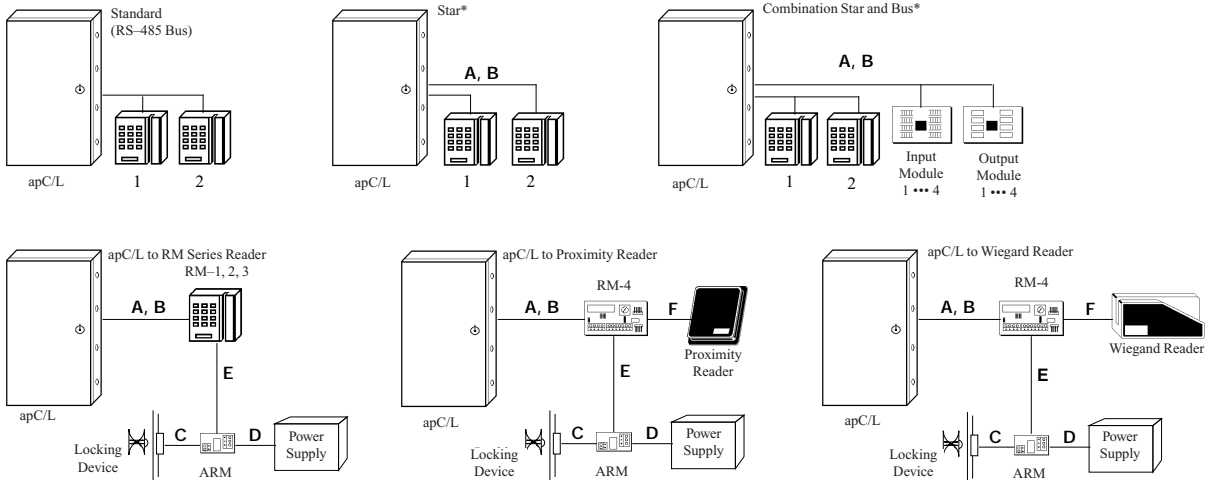
Weight apC/L: . . . . . 12.0 lbs. (5.40 kg) and battery

## Configuration Options

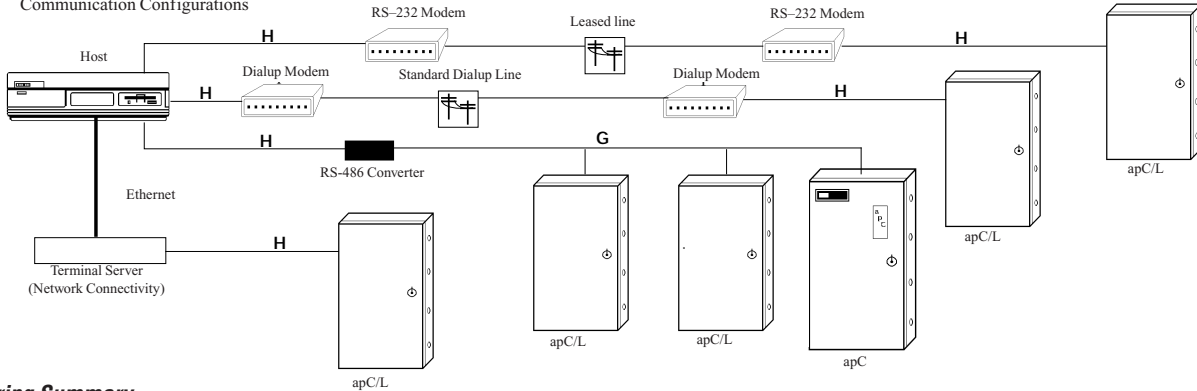
	Module	Maximum Number of Modules per Unit	Reader Ports	Readers	Inputs	Outputs
Standard	apC/L	1	1 RS-485	2		2
Optional Modules	Input Module	4			8 Class A Supervised	
	Output Module	4				8
	RM Reader <sup>1</sup> and RM -4 <sup>2</sup>	2			2 Class A Supervised	2 <sup>2</sup>

# apC®/L Intelligent Access Control and Alarm Monitoring Panel

## Wiring Configurations



## Communication Configurations



## Wiring Summary

Wire Label	From	To	Function	Belden Part No. <sup>1</sup>	Gauge (AWG)	No. of Pairs	Shielded	Max. Length (ft.)
A	apC/L	RM, I/O Modules	Communication	9841	24	1	Yes	4000
B	apC/L	RM, I/O Modules	Power <sup>2</sup>	8442/8461	22/18 <sup>3</sup>	1	No	varies <sup>4</sup>
C	ARM	Locking Device	Control	9462	22	1	Yes	25
D	ARM	Power Supply	Power	9462	22	1	Yes	25
E	RM	ARM	Relay Switching	9462	22	1	Yes	25
F	RM	Proximity/Wiegand	Reader Comm.	9536	24	3	Yes	500
G	Host	apC/L	(RS-485) Comm.	9842	24	2	Yes	4000
H	Host	Modem	(RS-232) Comm.	9855	22	2	Yes	50

<sup>1</sup> Use Belden Part Number specified or equivalent product. <sup>2</sup> Not required if powered locally. <sup>3</sup> Gauge varies according to length of wire. Consult apC/L manual for details. <sup>4</sup> Length varies according to application.

\* Not supported by all hosts. Contact factory for supported configurations.

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