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apC®/L

The apC®/L is an intelligent access control and alarm monitoring control panel which serves as a basic building block for C•CURE® security management systems. It is a two-door version of the popular apC®/8X 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 that make it more reliable, easier to service, and less expensive to own than other intelligent field panels.

The panel is configured with up to 4MB EPROM firmware or flash ROM, which makes firmware updates quick and easy.

The apC/L supports optional input and output modules that can be added to provide greater 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 the apC/L 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/8X.

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

FEATURES & BENEFITS

- 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
- 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
- UL 294/1076; FCC, CE compliant

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FEATURES

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 allow 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 communications, 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 detect 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.

Card to Transaction Storage

RAM Size	# of Cardholder Records	# of Events (Transactions)
512K	15,000	12,200
	12,500	18,700
	10,000	25,200
	7,500	31,700
	5,000	38,200

*This table was created using a cardholder record of 26 bytes per record and a transaction size of 10 bytes per transaction

apC/L Dialup Mode

The Dialup Mode is a communications 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 communications 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 a few host I/O ports and telephone lines.

Typically, the host initiates communications with an apC/L to download new data or change the state of a relay or lock output. The apC/L initiates communications with the host to report an important event, such as an alarm or to transfer data when memory is almost full. The frequency at which the host dials the apC/L can be set to a unique local time, as compared to the time setting of the host, regardless of any time zone differences. Dialup features may vary according to the host system.

Network Support

It is possible to use existing network infrastructures for communications between the apC/L and the host computer. (Due to the variety of network topologies, please contact Software House Applications Engineering for details on apC/L network connectivity.)

Input Module

The Input Module provides eight Class-A supervised inputs. A total of four 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 four 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 RM Series Card Readers support magnetic stripe, Wiegand, and proximity technologies within a universal housing. Among the card readers' many unique features include 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 it's time to update your firmware, you can do it quickly and easily using the FLASH ROM option. Instead of replacing the EPROM on the motherboard 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 allows continuous operation by providing up to eight hours of power. The battery mounts inside the apC/L cabinet and comes with a connection cable.

SPECIFICATIONS

Electrical

Wall Transformer	120 VAC 60 Hz
Output	18 VAC at 3.3 Amp max
Power Consumption	Less than 10 Watts typical
Auxiliary Hardware	Relay contacts rated at 30 V AC/DC 1 Amp inductive, 2 Amps non-inductive

Mechanical

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 and Battery	12.0 lbs. (5.40 kg)
Housing	16 AWG metal wall mounted locking cabinet with tamper switches on door and rear

Environmental

Operating	32° to 158° F (0° to 70° C)
Storage	9° to 185° F (-25° to 85° C)
Operating and Storage with Battery	32° to 122° F (0° to 50° C)

Configuration Options

	Module	Maximum Number of Modules per Unit	Reader Ports	Readers	Inputs	Outputs
Standard	apC/L	1	2 RS 485	2		2
Optional Modules	Input Module	4			8 Class A Supervised	
	Output Module	4				8
	RM Reader1 and RM-42	2			2 Class A Supervised	22

[1]Use Belden Part Number specified or equivalent product. [2]Not required if powered locally.

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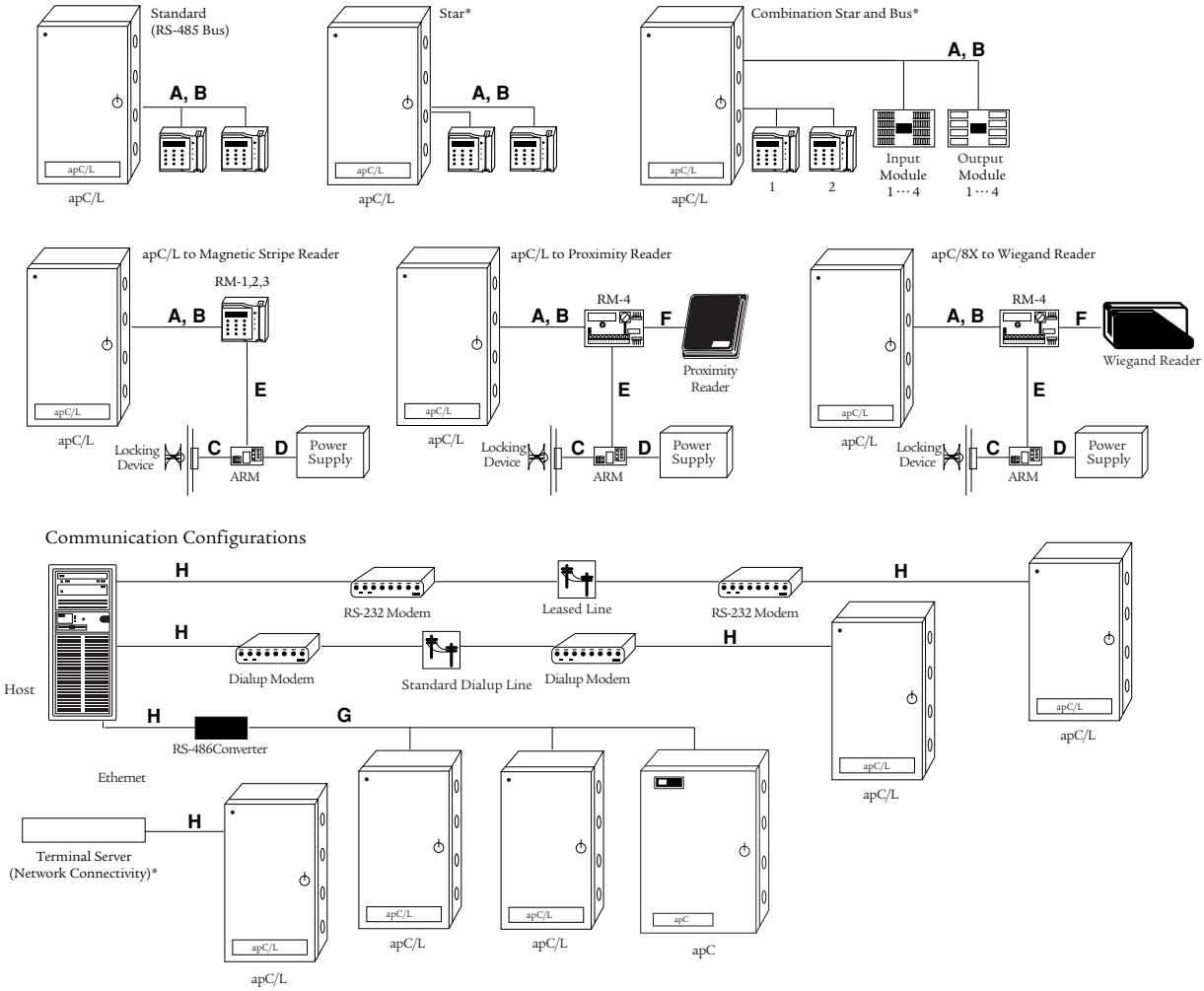
WIRING CONFIGURATION



WIRING SUMMARY

Wire Label	From	To	Function	Belden Part No.[1]	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	Power2	8442/8461	22/183	1	No	varies[4]
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

[1]Use Belden Part Number specified or equivalent product. [2]Not required if powered locally. [3]Gauge varies according to length of wire. Consult apC/L manual for details.

[4]Length varies according to application.

For Product Information
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SS_035_0302
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