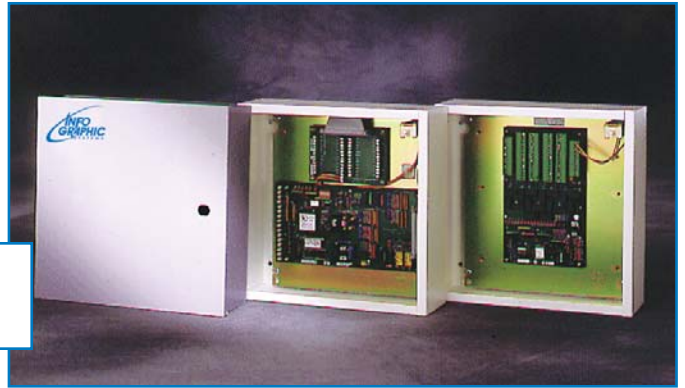


## ACU remote modules and enclosures

### REN, RIM and RRM



High-density alarm inputs and relay outputs are available with the Remote Input Modules (RIM) and Remote Relay Modules (RRM). When multiple RIMs and/or RRM are required, a large Remote Enclosure (REN) is available for mounting the modules in flexible, customer-definable configurations.

RIMs and RRM are connected through ACU field controllers. These alternative connection methods make it possible to optimize the cost of alarm and remote control installations by utilizing the reader communication paths, but not sacrificing the standard reader capacity.

### Features and Benefits

- Intelligent remote modules provide flexible and cost-effective status monitoring and control capabilities.
- All remote modules communicate with ACUs via RS-485 multi-dropped communication lines and reports an alarm when communication is lost.
- Use of remote modules on an ACU does not diminish the ACU's standard reader capacity.\*

- Two local Form C relays are provided (SPDT rating: 30 VDC at 2 Amps).

### Remote Relay Module (RRM)

- Provides 16 Form C relay outputs (eight DPDT and eight SPDT rating: 30 VDC at 2 Amps).
- Sixteen LEDs show the state of each relay.
- Six LEDs provide instantaneous polling and communication status feedback.
- Two unsupervised inputs.

### Remote Enclosure (REN)

- RIMs and RRM may be combined into a special enclosure, and customized for most specialized requirements when large numbers of alarm inputs and/or relay outputs are required.

### Remote Enclosure Display (REND)

- RIMs and RRM may be combined into a special enclosure, and customized for most specialized requirements when large numbers of alarm inputs and/or relay outputs are required.
- Same as REN enclosure except the RIM's alarm status LEDs are visible from outside the enclosure. Also provided is an area for inserting a description of each alarm input.

### Remote Input Module (RIM)

- Provides 16 UL grade AA supervised inputs and three unsupervised inputs.
- Sixteen tri-color LEDs show the state of the supervised input. Eight LEDs provide communication feedback and on-line status.

\* The reader capacity for the ACU2X/16 and ACU2XL/16 is only reduced by 1 for each remote module used.



## REN, RIM and RRM



### Quantity of Remote Modules per ACU (Note 1)

SAPPHIRE, SAPPHIRE Pro & DIAMOND II		
Module	ACU	ACU Elev
RIM	8 (Note 2)	8 (Note 2)
RRM	8 (Note 2)	8 (Note 2)

Note 1 = See ACU & Remote Modules Configuration Guide for further details.  
 Note 2 = Total of eight in any combination.

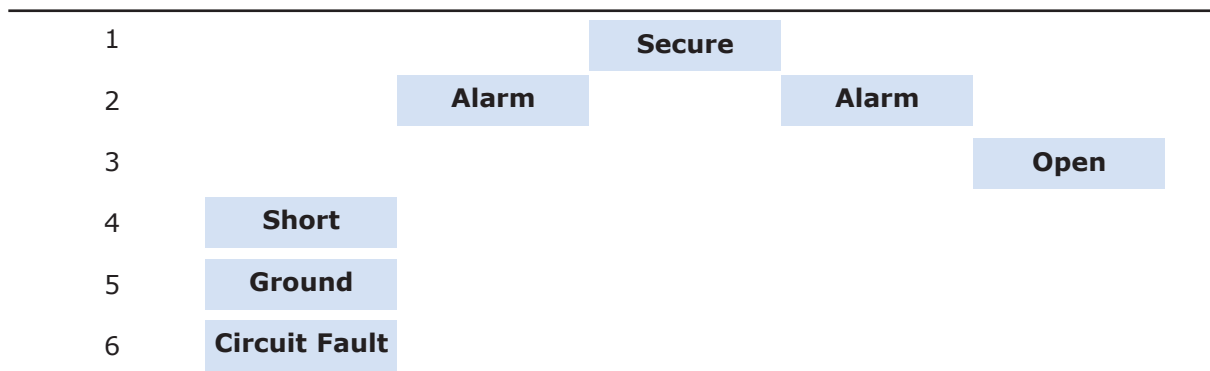
### Comparative Features of Remote Modules

Model No.	Enclosure Dimension (HxWxD)	Includes	Max. Model Capacity	Sup. Inputs	Outputs	Power Supply
RIM-0**	No enclosure — back plate only	1 RIM-0	1 RIM	16	2	No
RIM-1	12" x 12" x 4" (30.5 x 30.5 x 10.2 cm)	1 RIM-0	1 RIM	16	2	No
RRM-0**	No enclosure — back plate only	1 RRM-0	1 RRM	0	16	No
RRM-1	12" x 12" x 4" (30.5 x 30.5 x 10.2 cm)	1 RRM-0	1 RRM	0	16	No
REN	20" x 16" x 5" (50.8 x 40.64 x 12.7 cm)		2 RIMs, 2 RRM	32	32	Optional
REND	20" x 16" x 5" (50.8 x 40.64 x 12.7 cm)		2 RIMs, 2 RRM	32	32	Optional

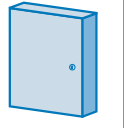
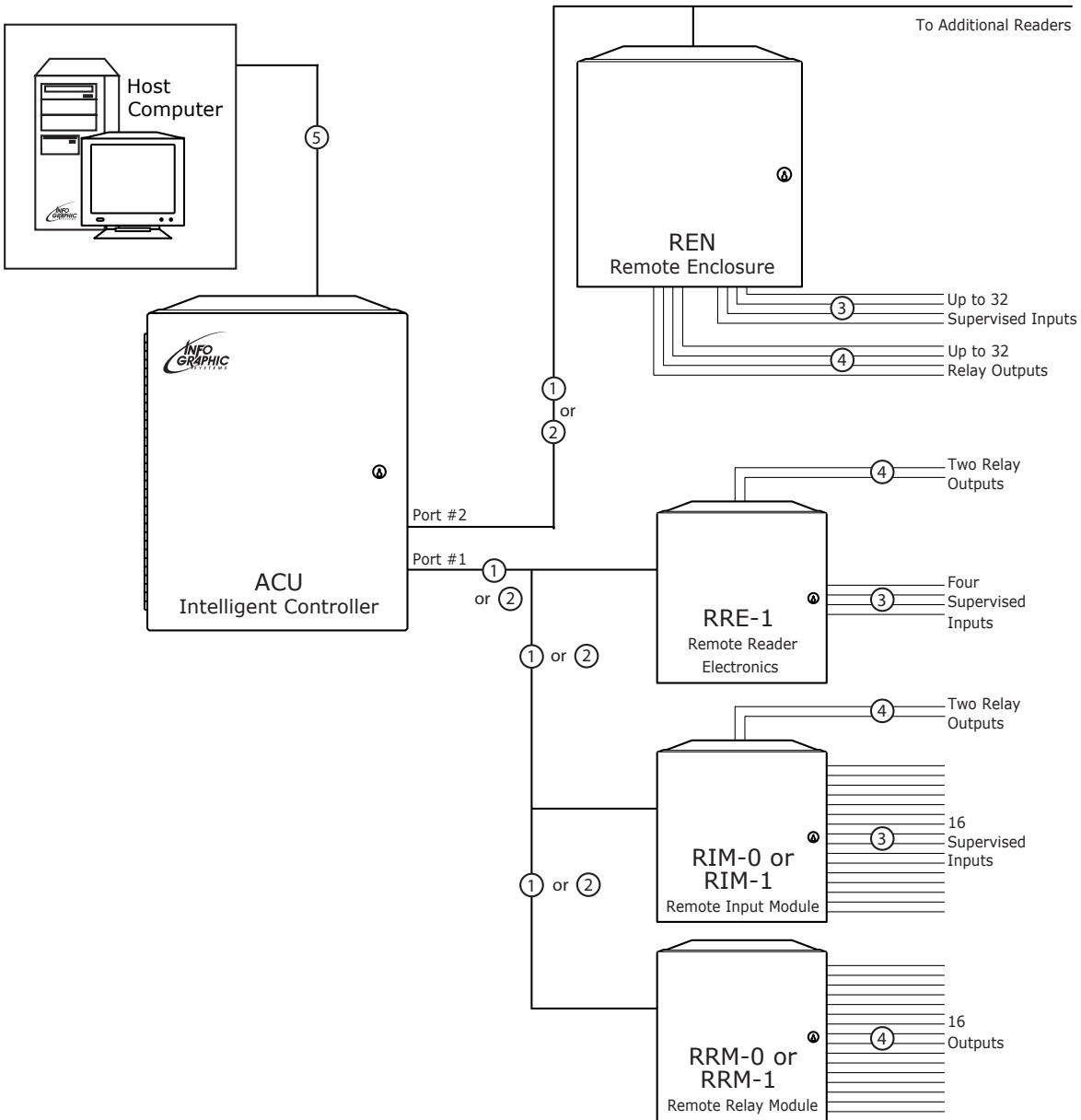
Note: RIMs, RRM and RENs can be powered from the 24 VDC ACU power supply.  
 \*\* Configurations without the enclosure do not comply with UL1076 and UL294 requirements.

### Six-state Supervision

All alarm input points of the ACU, RRE and RIM are fully supervised using a parallel/series end-of-line resistor network. Six-state supervision indicates all wiring conditions.



# ACU remote modules and enclosures



Cable Number	Description	Cable Number (or approved equal)	Maximum Distance
①	Communication (RS-485) Power (24 VDC)	Belden #9842 or Alpha #6222C, 24 AWG, 2-pair, individual shields, <b>braid overall shield</b> And Belden #9407 (paired) or Alpha #1172C, 22 AWG, 2-conductor/unshielded Or Belden #9409 (paired) or Alpha #1897C, 18 AWG, 2-conductor/unshielded	4,000' (1,220 m) 1,000' (305 m) 4,000' (1,220 m)
②	Communication (RS-485) and power (24 VDC)	Belden #9329-22 AWG, 3-pair/individual shields Or Belden #9369-18 AWG, 3-pair/individual shields	1,000' (305 m) 4,000' (1,220 m)
③	Supervised input	Belden #9407 (paired) or Alpha #1172C, 22 AWG, 2-conductor/unshielded	1,000' (305 m)
④	Relay output	Belden #9409 (paired) or Alpha #1897C, 18 AWG, 2-conductor/unshielded	1,000' (305 m)
⑤	Communication (RS-485)	Belden #9842 or Alpha #6222C, 24 AWG, 2-pair, individual shields, <b>braid overall shield</b>	4,000' (1,220 m)

## Specifications

### Standards

All ACU remote modules are designed in accordance with the following standards:

- UL 294
- UL 1076
- FCC CLASS A
- FIPS46-1
- MIL-STD 450B
- DCID 1/21

### Dimensions

#### (RIM, RRM)

- Height: 12" (30.48 cm)
- Width: 12" (30.48 cm)
- Depth: 4" (10.16 cm)

### Dimensions

#### (REN, REND)

- Height: 20.12" (51.10 cm)
- Width: 16.5" (41.91 cm)
- Depth: 5" (12.7 cm)

### Environmental

- Maximum: +66 C (+150 F)
- Minimum: 0 C (+32 F)
- Humidity: 95%

### Power

#### (REN, REND)

24 VDC @ 4 Amp output, 120/240 VAC, 50/60 Hz, 1 Amp, 120 Watts maximum

### Options

(see Order Numbering)

## Ordering Information

### Part Number

### Description

#### Remote Input Module (RIM) 16 supervised inputs

RIM-0	No enclosure, includes back plate and printed circuit boards
RIM-1*	Enclosure with door tamper switch. 12" H x 12" W x 4" D 30.5 cm x 30.5 cm x 10.2 cm

#### Remote Relay Module (RRM) 16 output relays

RRM-0	No enclosure, includes back plate and printed circuit board
RRM-1*	Enclosure with door tamper switch. 12" H x 12" W x 4" D 30.5 cm x 30.5 cm x 10.2 cm

#### Remote Enclosure (REN & REND)

REN, REND	20.12" H x 16.5" W x 5" D 51.1 cm x 41.9 cm x 12.7 cm
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\* Only complete unit with enclosure complies with UL1076 and UL294.

## Optional

### For RIM and RRM

RRL	Enclosure lock, keyed same as ACU/REN/REND
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### For REN and REND

ACU-BAT-1	2 12-volt, 7-Amp gel cell batteries without mounting bracket
ACU-BAT-2	2 12-volt, 7-Amp gel cell batteries with mounting bracket
ACU-BAT-4	Battery bracket with hardware (no batteries)

## Order Numbering

Select one from each column to determine proper model number for ordering.

Enclosure	RIMs	Power Supply	RRMs
<b>REN</b>	<b>0</b> -None <b>1</b> -1 RIM, 16 inputs <b>2</b> -2 RIMs, 32 inputs	<b>N</b> -None <b>P</b> -4A, 24 VDC	<b>0</b> -None <b>1</b> -1 RRM, 16 outputs <b>2</b> -2 RRMs, 32 outputs
<b>REND</b>	<b>0</b> -None <b>1</b> -1 RIM, 16 inputs <b>2</b> -2 RIMs, 32 inputs	<b>N</b> -None <b>P</b> -4A, 24 VDC	<b>0</b> -None <b>1</b> -1 RRM, 16 outputs <b>2</b> -2 RRMs, 32 outputs
<b>REN-</b>	<b>1</b>	<b>N</b>	<b>1</b>

### Example: REN-1N1

A remote enclosure (no display window) with one RIM (16 inputs, two outputs), no power supply and one RRM (16 outputs).

REND: RIM Status LEDs visible from front of enclosure.

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