DIGIPLEX EVO

Access Control Module V4.2

ACM12

Installation Instructions

P A R A D O X™

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Introduction

The Access Control Module (ACM12) is designed to be used with the Digiplex EVO System control panels. Each ACM12 allows you to connect a reader, a REX device, a door contact and a locking device to control the access to one door. If desired, door contacts can also be assigned to zones in the control panel to link the doors to the alarm system. This will allow you to use the same door for the access control system and the alarm system.

What's New 4.2

- Support for six additional schedule intervals for Door Unlock Schedule.
- Added security when disarming your system. New option to disarm with access card and PIN code.

Technical Specifications

AC Power:	16Vac, 20/40VA, 50 - 60Hz
Aux. Power:	12Vdc, typical 600mA, 1A max.
Battery:	12Vdc, 4Ah minimum
No. of Outputs:	2; one 50mA PGM output, one form C relay rated at 5A/28Vdc, N.O./N.C.
No. of Zones:	2 (Door Contact & REX device)
No. of Inputs:	2 (Negative Trigger & Tamper inputs)
Control Panel Compatibility:	Any EVO control panel

Installation

The module is connected to the control panel's combus as shown in Figure 1. Please refer to the control panel's Programming Guide for the maximum installation distance. Devices connected to the PGM output must be connected as shown in Figure 2. Refer to Figure 5 for connection drawings for the REX device, reader, locking device and door contact.

⚠ ***The door contact follows the control panel's EOL definition. When EOL is enabled and the door contact is not used, place a 1kΩ resistor across the CT and AUX- input terminals. If EOL is disabled, use a jumper. If the REX device is not used, place a jumper across the REX and AUX- terminals.***

AC Power

Use a 16.5Vac (50/60 Hz) transformer with a minimum 20VA. as shown in Figure 1. Do not use any switch-controlled outlets to power the transformer.

Backup Battery

To power the module's door lock relay during a power failure, connect a 12Vdc 4Ah rechargeable acid/lead or gell cell backup battery as shown in Figure 1. Connect the battery after applying AC power.

⚠ ***Inverting the polarity when installing the battery will blow the battery fuse.***

Connecting the External Negative Trigger

The ACM12 comes with an external negative trigger. You can use a PGM from the control panel or another module to release the access control door lock. The external negative trigger can also be triggered using a push-button. When the push button is pressed, the door will unlock. The PGM or push-button must ground the negative trigger. Connect the push-button as shown in Figure 2.

LED Display

AC (Green):	On when receiving AC power.
BATT (Green):	On when charging and during battery tests.
AUX (Yellow):	On when auxiliary output is active.
ERROR (Red):	Indicates a problem with the module.
RX (Green):	Flashes when receiving information from the panel.
TX (Green):	Flashes when transmitting information to the panel.

Table 1: Special Display

Error	RX	TX	Condition
ON	OFF	OFF	Combus is shorted / No clock / No data
ON	OFF	ON	Wrong data / Invalid Combus address (Too many modules)
ON	ON	OFF	Future Use
ON	ON	ON	Combus lines reversed (YEL and GRN)
Flash	----	----	Combus power is too low

Connection Diagrams

Figure 1: Connecting the power and combus

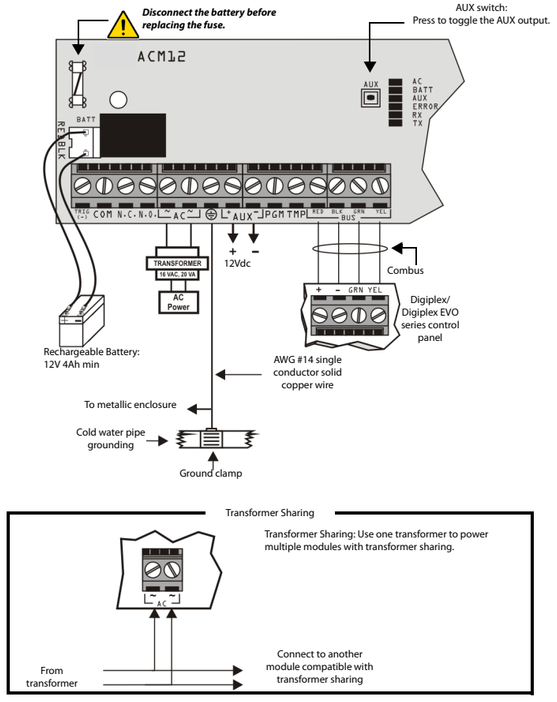


Figure 2: Additional Connection Information

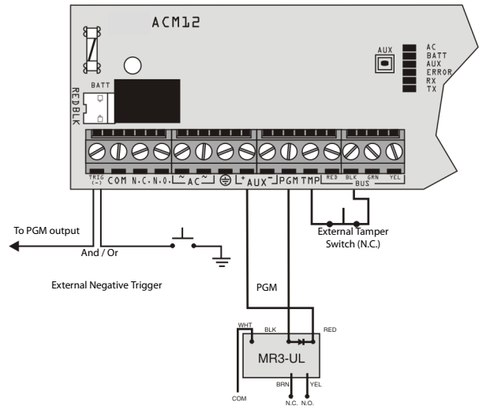
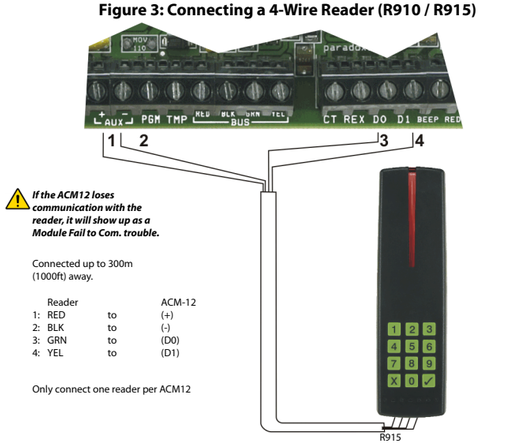


Figure 3: Connecting a 4-Wire Reader (R910 / R915)



⚠ ***If the ACM12 loses communication with the reader, it will show up as a Module Fail to Com. trouble.***

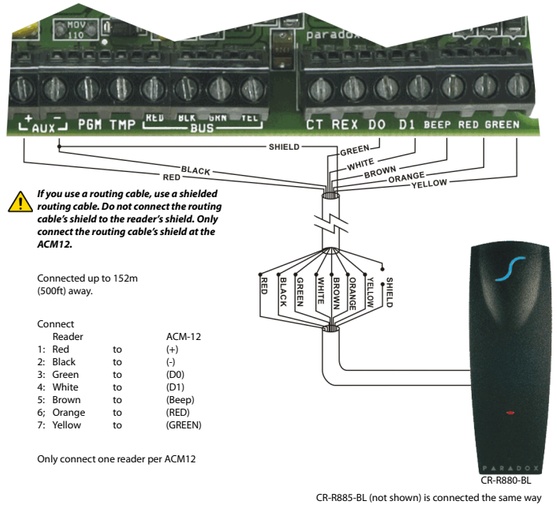
Connected up to 300m (1000ft) away.

Reader		ACM-12
1: RED	to	(+)
2: BLK	to	(-)
3: GRN	to	(D0)
4: YEL	to	(D1)

Only connect one reader per ACM12

R910 (not shown) is connected the same way

Figure 4: Connecting a 7-Wire Routing Cable



⚠ ***If you use a routing cable, use a shielded routing cable. Do not connect the routing cable's shield to the reader's shield. Only connect the routing cable's shield at the ACM12.***

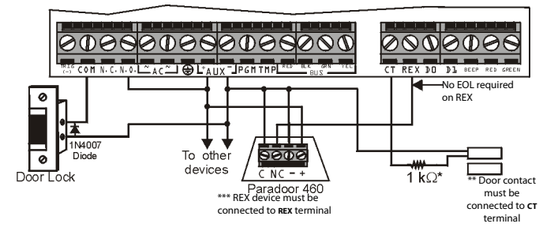
Connected up to 152m (500ft) away.

Reader		ACM-12
1: Red	to	(+)
2: Black	to	(-)
3: Green	to	(D0)
4: White	to	(D1)
5: Brown	to	(Beep)
6; Orange	to	(RED)
7: Yellow	to	(GREEN)

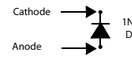
Only connect one reader per ACM12

CR-R885-BL (not shown) is connected the same way

Figure 5: Connecting Access Control Devices



⚠ ***When connecting the diode to the door lock, be sure to connect the cathode of the diode to the positive (+) voltage and the anode to the negative (-) voltage.***

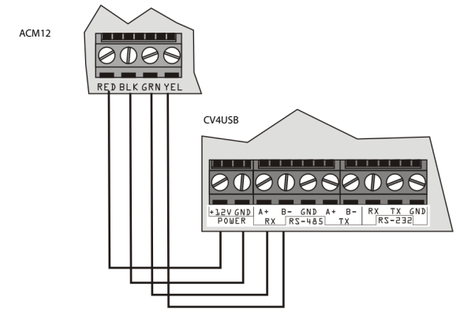


* = Follows control panel's EOL definition.

** = If the door contact is not used, install a jumper or a 1kΩ resistor across the **AUX-** and **CT** terminals depending on the control panel's EOL definition.

*** = If the Request for Exit (REX) device is not used, place a jumper across the **AUX-** and **REX** terminals.

Figure 6: Connecting for Firmware Upgrade (CONV4USB)



△ = Default setting

SECTION [001]: Partition Assignment

Option		OFF	ON
[1]	*Partition 1*	☐ Disabled	△ **Enabled**
[2]	*Partition 2*	☐ Disabled	△ **Enabled**
[3]	*Partition 3*	☐ Disabled	△ **Enabled**
[4]	*Partition 4*	☐ Disabled	△ **Enabled**
[5]	*Partition 5*	☐ Disabled	△ **Enabled**
[6]	*Partition 6*	☐ Disabled	△ **Enabled**
[7]	*Partition 7*	☐ Disabled	△ **Enabled**
[8]	*Partition 8*	☐ Disabled	△ **Enabled**

SECTION [002]: General Options 1

Option		OFF	ON
[1]	*Tamper Input*	△ **Disabled**	☐ Enabled
[2]	*Battery Charging Current*	△ **350mA**	☐ 850mA
[3]	*Reader's red LED to follow partition's status*	☐ Disabled	△ **Enabled**
[4]	*Reader's beeping to follow partition's status when option **[3]** is ON*	☐ Disabled	△ **Enabled**
[5]	*Card activates door unlocked schedule*	☐ Disabled	△ **Enabled**
[6]	*Door will relock*	△ **Immediately**	☐ When closed
[7]	*Reader's green LED for Access Granted*	☐ Disabled	△ **Enabled**
[8]	*Unlock on Request for Exit (REX)*	☐ Disabled	△ **Enabled**

SECTION [003]: General Options 2

Option		OFF	ON
[1]	*Door Left Open Alarm*	△ **Disabled**	☐ Enabled
[2]	*Door Left Open Pre-alarm*	☐ Disabled	△ **Enabled**
[3]	*Door Left Open Alarm*	☐ Silent	△ **Audible**
[4]	*Door Left Open Alarm follows*	△ **Alarm Restore**	☐ Beep Timer
[5]	*Door Forced Open Alarm*	△ **Disabled**	☐ Enabled
[6]	*Door Forced Alarm*	☐ Silent	△ **Audible**
[7]	*Door Forced Alarm follows*	△ **Alarm Restore**	☐ Beep Timer
[8]	*Reader Access Feedback*	☐ Visual	△ **Visual &** audible

SECTION [004]: PGM Options

Option		OFF	ON
[1]	*PGM Deactivation After*	△ **Deactivation Event**	☐ PGM Timer
[2]	*PGM Normal State*	△ **N.O.**	☐ N.C.
[3]	*PGM Base Time*	△ **1 second**	☐ 1 minute
[4] & [5]	*Special*	[4]	[5]
	☐ *Card Only*	OFF	OFF
	☐ *PIN Only*	ON	OFF
	☐ *Card and PIN*	OFF	ON
	△ *Card or PIN*	ON	ON
[6]	*Reader Locate Feedback*	△ **Visual**	☐ Visual & audible
[7]	*Unlock Door on Fire Alarm*	△ **Disabled**	☐ Enabled
[8]	*AC and Battery Supervision*	△ **Enabled**	☐ Disabled

Section	Data		Description	Default
[005]	__/__/__	(000 to 255 x 1 minute; 000 = Instant)	AC failure report delay	*030*
[006]	__/__/__	(001 to 255 seconds)	Door Unlocked Period	*005*
[007]	__/__/__	(001 to 255 seconds added to section **[006]**)	Door Unlocked Period extension	*015*
[008]	__/__/__	(001 to 255 seconds)	Door Left Open Interval	*060*
[009]	__/__/__	(001 to 255 seconds) Time to start pre-alarm before alarm is triggered	Door Left Open Pre-Alarm Timer	*015*
[010]	__/__/__	(001 to 255 seconds)	Beep timer for Door Left Open Alarm	*005*
[011]	__/__/__	(001 to 255 seconds)	Beep timer for Door Forced Open alarm	*005*
[012]	__/__/__	(000 to 255; refer to option **[3]** in section **[004]**)	PGM timer	*005*

[013] Door unlock schedule

	Start Time	End Time	S	M	T	W	T	F	S	H
Schedule A:	___ ___ : ___ ___	___ ___ : ___ ___	1	2	3	4	5	6	7	8
Schedule B:	___ ___ : ___ ___	___ ___ : ___ ___	1	2	3	4	5	6	7	8
Schedule C:	___ ___ : ___ ___	___ ___ : ___ ___	1	2	3	4	5	6	7	8
Schedule D:	___ ___ : ___ ___	___ ___ : ___ ___	1	2	3	4	5	6	7	8
Schedule E:	___ ___ : ___ ___	___ ___ : ___ ___	1	2	3	4	5	6	7	8
Schedule F:	___ ___ : ___ ___	___ ___ : ___ ___	1	2	3	4	5	6	7	8
Schedule G:	___ ___ : ___ ___	___ ___ : ___ ___	1	2	3	4	5	6	7	8
Schedule H:	___ ___ : ___ ___	___ ___ : ___ ___	1	2	3	4	5	6	7	8

	Event Group	Feature Group	Start #	End #
	Section	Section	Section	Section
PGM Activation	**[014]** __/__/__	**[015]** __/__/__	**[016]** __/__/__	**[017]** __/__/__
PGM Deactivation	**[018]** __/__/__	**[019]** __/__/__	**[020]** __/__/__	**[021]** __/__/__

⚠ ***Only Event Groups 000 to 055, 062 and 063 can be used to program the module's PGM.***

SECTION [022]: Safe Mode Options

Option		OFF	ON
[1]	*Safe Mode*	☐ Disabled	△ **Enabled**
[2]	*Safe Mode Access*	☐ Disabled	△ **Enabled**
[3]	*Reader Safe Mode Feedback*	△ **Visual**	☐ Visual & audible
[4]	*Unlock Door in Safe Mode*	△ **Disabled**	☐ Enabled
[5]	*Access Cards in Safe Mode*	△ **Safe Cards only**	☐ Any Cards
[6] to [8]	*Future Use*	☐ N/A	☐ N/A

SECTION [031] PGM Options 2

Option		OFF	ON
[1]	Flexible PGM Deactivation Option	△ **PGM Timer only**	☐ Timer / Deactivation event
[2]	Reload Timer on Activation Event	△ **Don't Reload**	☐ Reload Timer
[3] to [4]	Future Use	☐ N/A	☐ N/A
[5]	Card and Pin required to disarm*	△ **OFF**	☐ ON
[7] to [8]	**Future use**	☐ N/A	☐ N/A

* Only valid when section [004] options 4 and 5 are enabled.

Section	Data		Description	Default
[023]	__/__/__	(001 to 024 hours; 000 = Disabled)	Safe Mode Door Unlocked Period	*000*
[024]	__/__/__	(001 to 255 seconds; 000 = Follow REX)	REX Unlocked Period	*000*
[025]	__/__/__	(000 to 003)	Red LED Brightness	*003*
[026]	__/__/__	(000 to 003)	Green LED Brightness	*003*
[027]	__/__/__	(000 to 003)	Buzzer Frequency	*001*
[028]	__/__/__	(000 to 255 minutes; 000 = instant)	AC Restore Report Delay	*005*
[029]	__/__/__	(000 to 255 minutes)	Stay Lock Delay	*000*
[030]		**Test PGM:** Activates the PGM for 8 seconds to verify if the PGM is functioning properly.		
[032]	__/__/__	(000 = steady, 001 to 254 = pulsed (increments of 8ms), 255 = pulsed fire)	PGM Output type	*000*
[033]	__/__/__	(000 to 255 seconds)	Bypass door force alarm delay	*000*
[040]		**Access Card Serial Number Display:** View an access card's serial number displayed on any LCD or Grafica keypad on the combus. When the ACM12 is in access card display mode, the door connected to the module cannot be accessed.		
[061]		Assign Safe Mode Access Card 1 (Present Card 3 Times)		
[062]		Assign Safe Mode Access Card 2 (Present Card 3 Times)		
[063]		Assign Safe Mode Access Card 3 (Present Card 3 Times)		
[064]		Assign Safe Mode Access Card 4 (Present Card 3 Times)		
[070]		Delete All Safe Mode Access Cards		
[071]		Delete Safe Mode Access Card 1		
[072]		Delete Safe Mode Access Card 2		
[073]		Delete Safe Mode Access Card 3		
[074]		Delete Safe Mode Access Card 4		

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For complete warranty information on this product please refer to the Limited Warranty Statement found on the website www.paradox.com/terms. Your use of the Paradox product signifies your acceptance of all warranty terms and conditions.

We strongly advise that you review and take into consideration the "Limitations of Alarm Systems" document available on our website at http://paradox.com/Terms/.

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