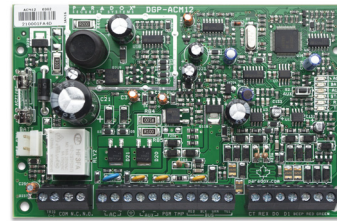# PARADOX™

ACM12
Installation Manual V4.69 and higher

Supports EVOHD / EVO192 V4.5 and higher

Description

Thank you for choosing the ACM12 for your access control. The ACM12 is designed to be used with the Paradox EVO system.
It allows you to manage access of one door, via card, pin or both, provide forced door and door left open detection, and arm / disarm functions.
The ACM12 supports full Off-Line functionality, which stores the entire database in memory when the panel connection is lost and enables full synchronization upon restore. It supports one IN reader and one OUT reader if using 4-wire Paradox readers, or one IN reader only if using the 7-wire 26-bit Wiegand reader. The ACM12 also supports a REX, a door contact that can be an alarm zone, and a door locking device.

With accelerated response of up to 999 users, simple and minimal programing, as well as easy installation, the ACM12 is designed to provide you with a reliable and professional access solution.

Compatibility

ACM12 V4.5 and higher is compatible only with panels EVOHD V4.5 and higher and EVO192 V4.5 and higher.

Upgrade Note

When upgrading to the latest version, it is advisable to upgrade the panel first, and then upgrade the ACM12 module.

Off-Line Feature

The ACM12 V4.5 and higher fully supports Off-Line functionality. In the case of panel connection loss, the ACM12 will switch to Off-Line mode and will fully function with user access level and schedules; arm / disarm user permissions will be overridden. While resuming communications with the panel, all programming changes will be updated. In Off-Line mode, events are kept locally in the module and can be uploaded manually for each ACM12 when communication is restored.

Installation (Figure 1)

Connect the ACM12 as per the drawing below. When powering up, all ACM12 modules will synchronize with the panel and upload all user and schedule data. Typically, 100 users and 10 schedules will take about 50 seconds to upload. This will also take place upon resuming connection with the panel. Synchronization is indicated by RX/TX LEDs flashing together at 4 Hz. If an ACM12 V4.5 detects a connection to a different EVO panel, data will be erased and the new panel data will be synchronized.

POWER: The ACM12 should be powered with a 16 Vac 20Va. Battery should be connected.

Unlock Device Diode: When connecting a locking device, it is recommended to connect diode 1N4007 as per Figure 1, to keep the relay contacts reliability.

Firmware Upgrade: Should you need to upgrade the ACM12 firmware, connect the CV4USB A+ to Green and B- to Yellow, and power Red and Black.

Connection	Description	Connection	Description
TRIG	Shorting to ground will activate the unlock relay.	TMP	Tamper switch follow panel definition Section [3034] ACM12 programming section [003] option1 to enable.
COM/NC/NO	Unlocking relay, max 5A / 28 VDC AC - 16V 20 VAC	EVO BUS	Connect to EVO bus.
⏚	Additional Aux (-)	CT	Zone for door contact. Can be system zone Section [0400], EOL will follow panel global EOL panel section 3033 bit 7.
AUX	Use to power the Reader, REX, and other devices. Max output 600mA, fuseless shutdown.	REX	Request for exit detector connection, it is connected without EOL.
PGM	50mA output follow. Some predefined conditions, see programming Section [011].	D0	Connect to Green wire of the Reader.
CT	Door contact is used to monitor door condition and to identify door left open and forced door status.	D1	Connect to Yellow wire of Reader.

Turning Auxiliary Power ON / OFF (V4.52 and above)

Press and hold the AUX ON / OFF switch for 7 seconds. This toggles the auxiliary power ON or OFF.

IN / OUT Reader Assignment (V4.52 and above)

The reader that is detected first will be considered the IN reader, by default. The reader that is detected second will be considered the OUT reader.

Changing the Default Reader Assignment (V4.52 and above)

1. Press and hold the AUX ON / OFF switch for 3 seconds. The ERROR, TX and RX LEDs flash for 2-3 seconds.
2. Press any key or present an access card to the reader you want to designate as the IN reader. Automatically, the other reader will be designated as the OUT reader.

ACM12 Connection to PS45

Connect the ACM12's AC and ground to the PS45's Aux **+** and - connectors. You can power up to three ACM12 modules using the PS45 Power Supply instead of using separate transformers for each ACM12. Connect each ACM to the appropriate output, as shown below.
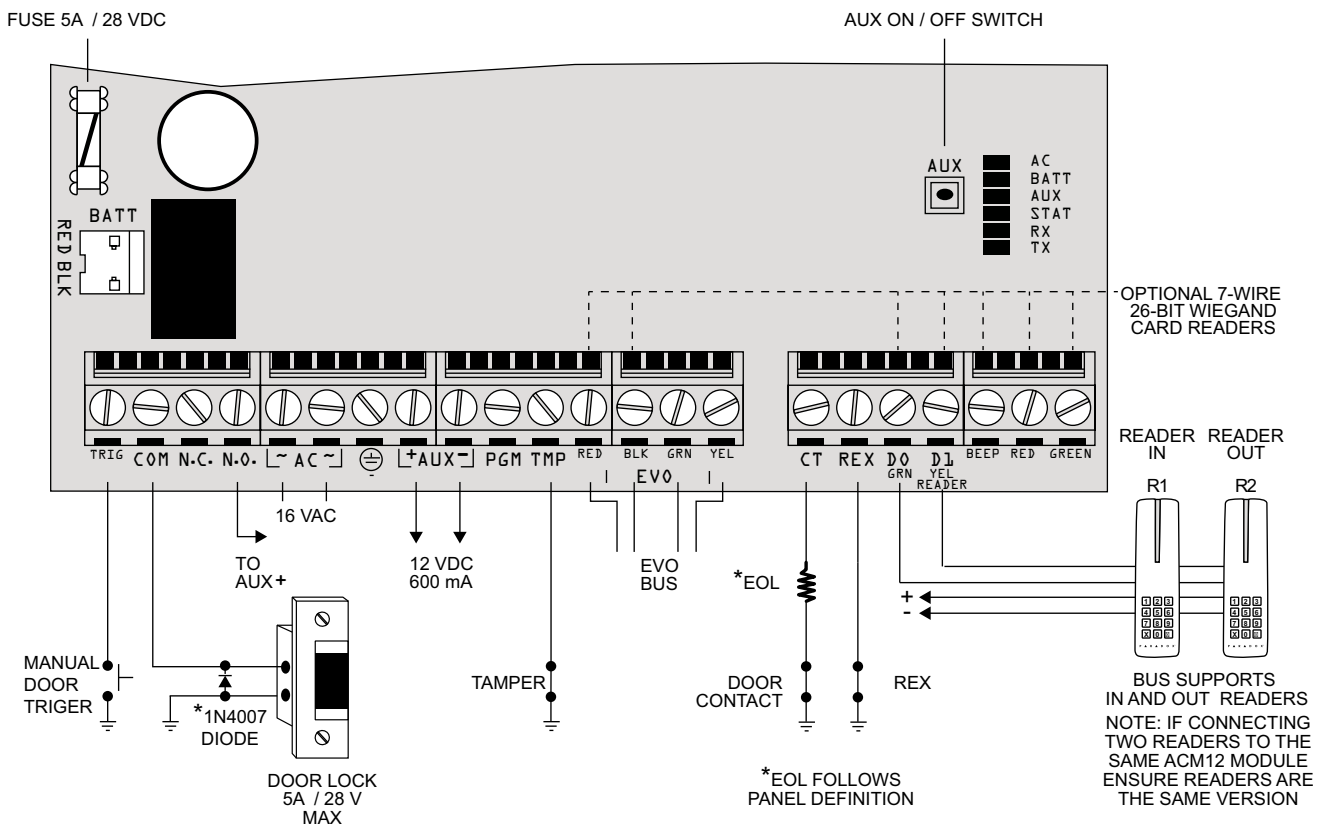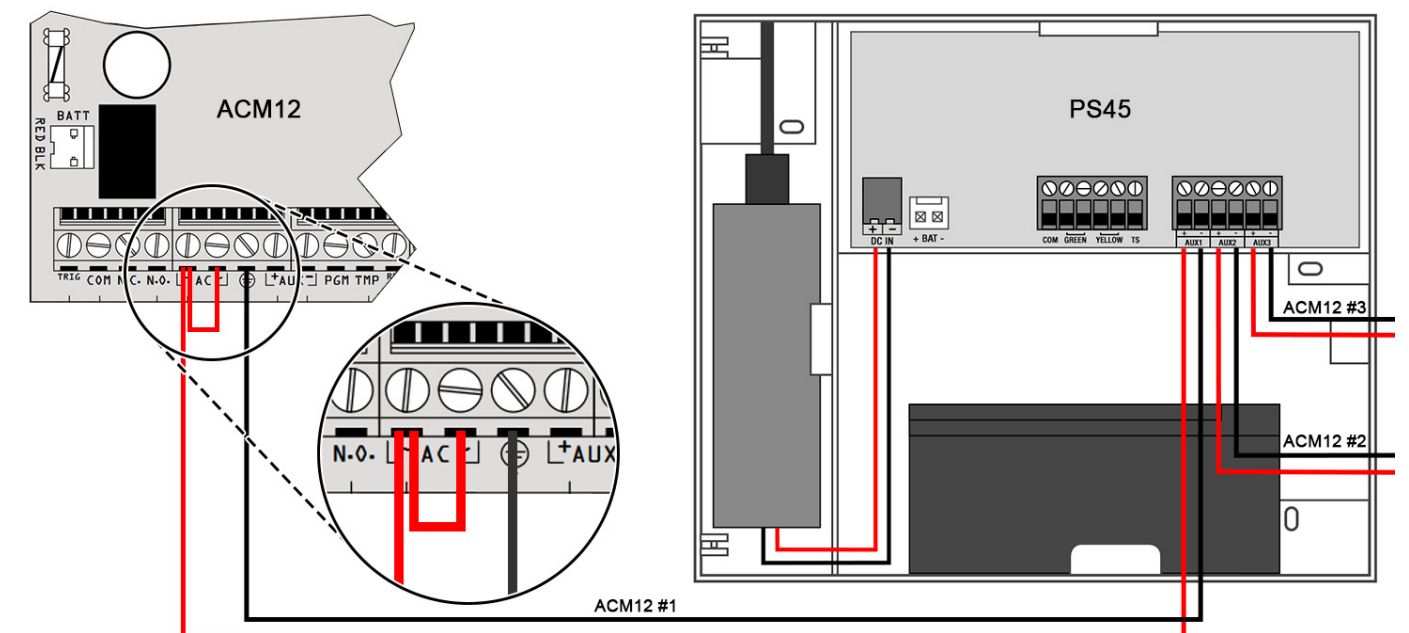

Figure 1

Programming via BabyWare or Keypad

Installer + Section [4003] + Serial Number of the ACM12.
* = Default

Section [001] General Options

Option		OFF	ON
[1]	Tamper Input	**Disabled***	Enabled
[2]	Battery Charging Current	**350mA***	850mA
[3]	AC monitoring	Disabled	**Enabled***
		[4]	[5]
	Card only	**OFF***	**OFF***
	Card or PIN	ON	OFF
[4] & [5]	Arm and Access: Card or PIN Disarm: Card **and** PIN	OFF	ON
	Card and PIN always	ON	ON
[6]	Unlock door on Fire Alarm	Disabled	**Enabled***
[7]	Door forced open Alarm	**Disabled***	Enabled
[8]	Card activates door unlocked schedule (V4.52 and above)	Disabled	**Enabled***

Section	Data	Description	Default
[002]	__/__/__ (Seconds)	Door Unlocked Period	005
[003]	__/__/__ (Seconds)	Door Unlocked Period Extension (handicap use)	015
[004]	__/__/__ (Seconds)	Door Left Open warning delay	060
[005]	__/__/__ (Seconds)	Door Left Open Alarm delay from warning	060
[006]	__/__/__ (Minutes)	Safe Unlock delay	00
***[007]**	__/__/__ (01 - 32)	1st Unlock Door Schedule	00
***[008]**	__/__/__ (01 - 32)	2nd Unlock Door Schedule	00
***[009]**	__/__/__ (01 - 32)	3rd Unlock Door Schedule	00
***[010]**	__/__/__ (01 - 32)	4th Unlock Door Schedule	00

* Follow Panel User Schedules.

Section	Data	Description	Default
[011]	__/__	PGM Activation	00

00 : Arm
01 : Follow Door Unlock Schedule
02 : Follow Access Granted (will be activated for the unlock period)
03 : Follow Door Forced State
04 : Follow Door Left Open Warning / Alarm
05 : Utility Key 1
06 : Utility Key 2
07 : Utility Key 3
08 : Utility Key 4
09 : Utility Key 5
10 : Utility Key 6
11 : Utility Key 7
12 : Utility Key 8
13 – 99 : Future Use

Section [012]

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 [013]

Option		OFF	ON
[1]	Re-lock option	**On door opening**	On door closure
[2]	On access granted / utility key event	**PGM follow lock delay**	PGM toggle state
[3]	Unlock schedule override on access granted	**Disabled**	Card locks door
[4] - [8]	For future use	-	-

LED Feedback

AC	On (green) when module has AC power.
BATT	On (green) when charging and during battery tests. Battery test every one minute.
AUX	On (Yellow) when auxiliary output is active.
STAT	On or flash (Red) when an error occurs. Refer to Error Display table below.
RX	Flashes (Green) when receiving information from the panel.
TX	Flashes (Green) when transmitting information to the panel.

* RX / TX will flash together at a frequency of 4Hz when synchronization takes place.

Error Display

STAT (Red)	RX (Green)	TX (Green)	Condition
ON	OFF	OFF	EVO bus is shorted / No clock / No data (offline)
ON	OFF	ON	Wrong data / Invalid EVO address, too many modules or incompatible panel version
ON	ON	ON	EVO bus YEL and GRN reversed
FLASH	----	----	EVO bus voltage is low (less than 9V)

Technical Specifications

User Capacity	999
Door Unlock Schedules	4 (total of 8 periods)
User Schedules Capacity	32
User Security Levels	15
Power	16 Vac, 20 VA
Auxiliary Output	12 Vdc, 600 mA, 1A fuseless shutdown
Battery	12 Vdc, Gel Cell. Connection protected with 5A fuse
Door Unlock	Form C relay rated at 5A / 28 Vdc
PGM Output	50 mA predefined definitions
Device Connections	Two Paradox 4-wire readers or one 7-wire 26-bit Wiegand reader, door contact, REX device, tamper
Manual Unlock	Negative trigger input
Control Panel Compatibility	EVOHD Control Panel V4.5 and above EVO192 Control Panel V4.5 and above
Metal Box (optional)	Minimum 20 x 25.5 x 7.6 cm (8 x 10 x 3 in.) metal box
Dimensions	14 x 9.2 x 2.5 cm (5.5 x 3.6 x 1 in.)