

ACTpro IOM  
INPUT/OUTPUT  
MODULE



**Installation and Configuration  
Instructions for the  
ACTpro IOM Input/Output Module**

## CONTENTS

<b>Technical Specification</b> .....	<b>1</b>
<b>Product Overview</b> .....	<b>1</b>
<b>Features</b> .....	<b>1</b>
<b>ACTWinPro Support</b> .....	<b>1</b>
<b>Applications</b> .....	<b>2</b>
<b>Installation</b> .....	<b>3</b>
Enabling IOM communications from the keypad.....	3
<b>Configuration</b> .....	<b>4</b>
Step 1 .....	4
Step 2 .....	4
Step 3 .....	5
<b>Elevator Control</b> .....	<b>6</b>
Step 1 .....	6
Step 2 .....	6
Step 3 .....	6
Step 4 .....	7
Step 5 .....	7
Step 6 .....	8

**Access Control Technology**  
**Unit C1, South City Business Centre**  
**Tallaght Dublin 24**  
**Ireland**  
**TEL: +353-1-4662570**  
**FAX: +353-1-4520427**  
**[info@accesscontrol.ie](mailto:info@accesscontrol.ie)**

## Technical Specification

Voltage	12V DC
Current Consumption	250mA
Communications	RS485 to ACT2000/ACT3000
Operating Temperature	-10°C to +50°C
Mounting	Surface
Installation	Indoors
Weight	375g
Dimensions	190mm/137mm/58mm
Construction	Polycarbonate housing

## Product Overview

This product is an 8 Input/8 Output device that allows the ACT3000 and ACT2000 to be used in applications where signalling to other equipment is required. Examples of this are elevator control, alarm systems, CCTV switching and general monitoring.

A maximum of 4 I/O modules maybe connected to any single controller, giving control of up to 32 relays and 32 inputs per ACT2000/ACT3000.

## Features

- 8 form C relays
- 8 supervised inputs
- Tamper protection
- 2 status LEDs
- Timer for each output
- Input Timer
- Output switched ON/OFF by log event, input or timezone
- ACTWinPro support

## ACTWinPro Support

- Named inputs and outputs
- Inputs and outputs Logged
- Normally open/closed.
- Active on timezone
- Active on event, user, door or user group
- Active on input on/off
- Active on output on/off

## **Applications**

### ***Elevator control***

In this application, a user presents a card to the proximity reader when he enters the cab. This enables the buttons for the floors the user has access to. The buttons stay on for a programmable amount of time (normally 5 seconds) and then switch off.

### ***Alarm Systems***

The unit can be programmed to fire a relay on alarm events such as tamper, door forced, mains fail etc. It can also monitor the status of certain inputs and switch an output when the input changes state. All changes are fully logged in ACTWinPro complete with timestamp.

### ***Building Management***

The IOM allows the ACT3000/ACT2000 to be used in building management applications. It can switch an output to turn on heating or lighting at certain times or only when someone is present. It can also switch off heating when the last person has left the room, saving on energy costs.

### ***CCTV systems***

Using an IO Module allows switching of CCTV cameras when someone enters a room or when access is denied.

## Installation

**Please see the diagram on the last page for complete wiring.**

The IOM Input/Output module is wired to the controller on the same RS-485 network as the DS100 Door stations. The IOMs are addressed using the DIP switches on the PCB. The IOMs are maybe given any address in the range 1 to 4.

No configuration of the IOM is possible from the keypad, useful configuration can only be performed from ACTWinPro. However the IOM may be enabled from the keypad which allows the communications between the ACT2000/ACT3000 and the IOM to be tested without the need for ACTWinPro.

### ***Enabling IOM communications from the keypad.***

1. Enter the Installer menu by entering the installer code. The LCD on the controller will display “**Installer Menu**” on the top line and “System Settings” on the lower line.
2. Press the “0” key twice “**Communications**” will be displayed on the bottom line of the display.
3. Press the “✓” key followed by the “0” seven times, now “**Communications IO Modules**” will appear on the display.
4. Press the “✓” and use the “0” key to select IOM address, now press the “✓” to enable the communications.
5. If communications are established the Red LED on the IOM will flash rapidly, otherwise the LED will pulse once a second and the ACT2000/ACT3000 will display “**IO Module X Offline**”.

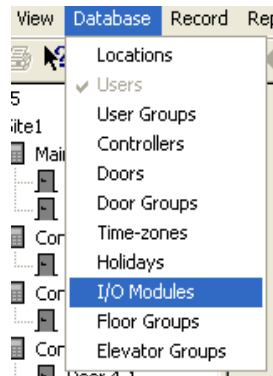
**The IOM is supported by ACT2000X 4.08 and ACT3000 1.07 and greater Firmware versions.**


## Configuration

All IOM Input/Output Module configurations are performed via ACTWinPro.


### Step 1.

The IOM configuration is available from the Database drop-down menu.



Click on the New icon  to generate a new IOM input/output module in the database.

I/O Number	I/O Name	Controller	Local I/O#	<input checked="" type="checkbox"/> Enabled	<input type="checkbox"/> Mains Fault Report
1	Camera	Main Building	1		

Give the IOM a name and assign it a controller and the local I/O number. This number must be the same as the dipswitch setting on the IOM. Remember to tick the Enabled box. Finally, click the Accept icon .

### Step 2.

The inputs section of the screen allows each input to be assigned its own name. This is the name that will appear in the log when the input changes state.

No.	Input name	Status
1	IO 1 : Input 1	Offline
2	IO 1 : Input 2	Offline
3	IO 1 : Input 3	Offline
4	IO 1 : Input 4	Offline
5	IO 1 : Input 5	Offline
6	IO 1 : Input 6	Offline
7	IO 1 : Input 7	Offline
8	IO 1 : Input 8	Offline

Name	IO 1 : Input 1
Enable	<input type="checkbox"/>
Timezone	24 Hours
Output	No Output
Options	<input type="checkbox"/> Normally Open <input type="checkbox"/> Supervised <input type="checkbox"/> Log <input type="checkbox"/> Alarm
Timer	5

Inputs can be enabled by timezone and when an output is on. While the input is enabled, it can be logged (if the **Log** tick box is checked) or it can generate an **Alarm** when it goes active.

For example, you may want the input to be monitored only during the day or only when a particular output is on.

The **Normally Open** option allows the input to be in the normal state when the contact is open and active when the contact is closed.

If the **Supervised** option is checked, then two 4k7 resistors are required (see the wiring diagram at the end of the manual). This allows the IOM to check for tampers and shorts across the input contacts.

The **Timer** option selects the amount of time the input must remain in a certain state before the change is reported. This prevents a momentary change in the input from causing a false alarm.

If any inputs are unused, simply set the Enable Timezone to Not Active.

### Step 3.

The screenshot shows the 'Outputs' configuration window. On the left is a table listing 8 outputs, all currently 'Offline'. The right side contains configuration options for the selected output (ID 1: Output 1).

No.	Output name	Status
1	ID 1: Output 1	Offline
2	ID 1: Output 2	Offline
3	ID 1: Output 3	Offline
4	ID 1: Output 4	Offline
5	ID 1: Output 5	Offline
6	ID 1: Output 6	Offline
7	ID 1: Output 7	Offline
8	ID 1: Output 8	Offline

**Name:** ID 1: Output 1

**Options:**  Log,  Normally On,  Elevator Floor

**Follow:** Input: No Input, Door: No Door

**Timer:** 5

**Active Timezone:** Not Active

**Output On Event:** Event: No Event, Door: No Door

**Output Off Event:** Event: No Event, Door: No Door

Each output can be assigned an individual name. It maybe programmed to **follow** the state of an input or of a door. For example as a door opens, the output will activate. When the door closes, the output will de-activate.

The **Options** section allows the input to Logged as it changes state, to be Normally On or to act as an Elevator Floor. The **Timer** value selects how long the relay fires for.

By selecting a timezone from the **Active Timezone** drop-down box, the relay can be made activate during this timezone.

**Output On Events / Output Off Events** section allows events occurring on a Door to turn the Output relay on or off. The available event groups are **Access Granted, Access Denied, Door Alarm, Fire, Technical Fault, Door Armed, Door Disarmed**. **Access Granted** event group consists of Access/Exit grant event including push button exit. **Access Denied** includes both Access and Exit denied event. The **Door Alarm** event group consists of the ajar, forced and duress events. **Technical Faults** event group consists of Tamper/Mains Fault and Offline events.

## Elevator Control

Elevator control is one particular application of the IOM ACTWinPro allows programming of users, permitting them access to different floors in an elevator lift shaft at different times.

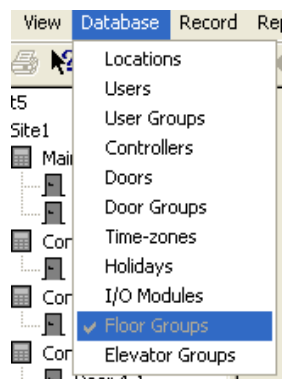
The outputs on the IOM are wired into an elevator controller. Up to 32 floors maybe controlled from a single ACT3000/2000. However controllers maybe networked giving control of more floors.



### Step 1.

The first step is to select the Elevator Floor option  Elevator Floor for the output. This means that this relay acts as an Elevator Floor. Notice that all the other options are greyed-out.



### Step 2.

Click on the Floor Groups option under the Database drop-down box.



Click the New icon  to generate a new Floor Group in the database. Select a controller that the Floor Group will belong to and assign the Floor Group a name. Finally, click the Accept icon .

### Step 3.

All the outputs that are assigned the Elevator Floor option AND belong to the selected controller will appear in the **Floors not in Group** box on the left. Use the  button to move the desired Floors into the group. Click the Accept icon .

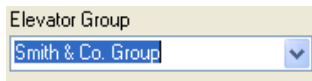
**Step 4.**

The next step is to create an Elevator Group. Follow the procedure as before by selecting Elevator Group from the Database drop-down menu and clicking the New icon. Assign the **Floor Access Rights** by selecting the floor group and the timezone when access is allowed. In the example below, Elevator Group 1 always allows access to the Smith & Co. Floor group.

Timezone	Floor Group
24 Hours	Smith&Co.

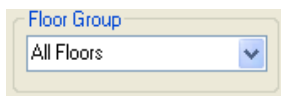
**Step 5.**

A User Group must be created and the Elevator group assigned. This means that any user with this user group is allowed access to the floors assigned in the Elevator Group.



### **Step 6.**

Finally a Door must be assigned to a Floor Group. This would be the Door that has the reader attached in the Elevator Cab. The Floor Group assigned would consist of all the possible floors that are available from the elevator. Go to the Doors Database and assign a Floor Group.





# ACTPRO IOM IO Module Installation

Upto 4 IO Modules may be connected a single ACT3000/2000 Controller.

The IO Modules share the same network as Door stations (DS100s).

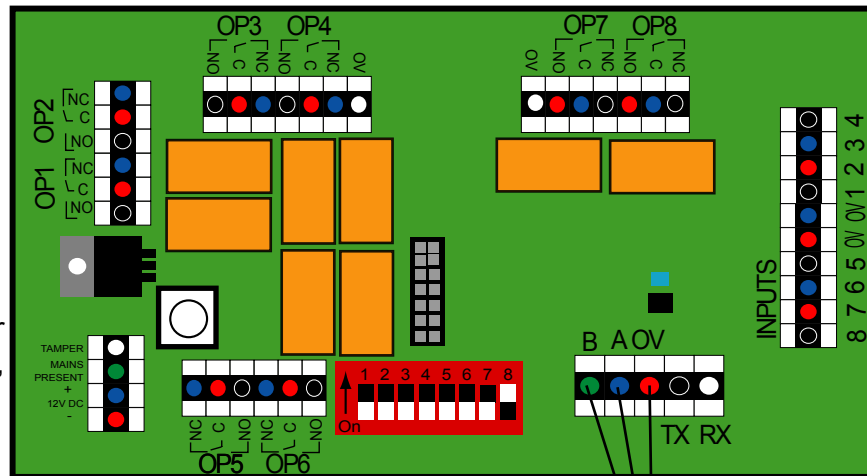
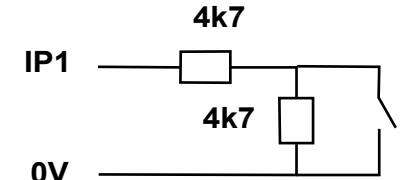
Therefore a controller may support up to 16 Doors and 4 IO Modules.

Installation of an IO Module requires the following

- (1) Wiring Inputs and Outputs.
  - (2) Providing 12V Power.
  - (3) Wiring IO Module A,B and 0V RS485 signals to the Controller.
  - (4) Setting the IO Module address
- All Configuration of Input/Output Operation is performed from ACTwin

## INPUTS:

All 8 inputs maybe supervised (enabled from ACTWin software). Supervised inputs maybe in one of 4 states, Normal,Active,Short or Open circuited. Supervised inputs required the installer to provide 2 resistors per Supervised input as shown below.

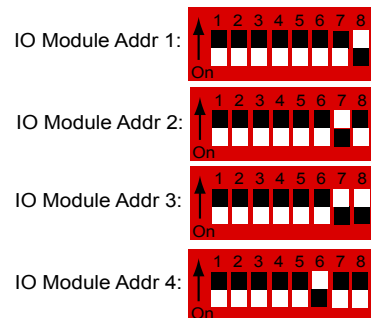


If the Mains Present or Door Contact inputs are not used, they should be linked to 0V

## SETTING IO MODULE ADDRESS

IO Module address is set via the DIP switches. Up to 4 IO Modules maybe connected to a ACT2000/3000 controller.

To next Door or IO Module

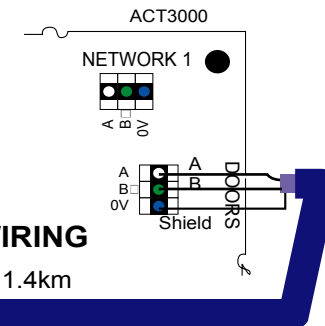


### FACTORY DEFAULT

This unit should be reset to its factory default condition before installation. To do this, power the unit up with ALL switches in the OFF position. The two LED's will illuminate for about 2 sec. The correct switch settings may then be set.

## A/B/OV RS485 WIRING

Total Length max 1.4km



Network cable use either:

- (1) Single shielded twisted pair, Belden 9501 or similar.
- (2) CAT5 Cable: A/B must use the same twisted pair.

LED Functionality:

Red LED indicates the status of communications with the Controller. While online to the controller the Red LED will flash rapidly. If there is a problem it will flash slowly (about once a second). Green LED will flash if an event occurs on the IO Module.