Operating & Installation Instructions for

ACTpro 4200

4 Door Controller & 3 Amp Power Supply

18-00074

Contents

Diagrams

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Features

This product consists of a 4-door controller housed inside a metal cabinet, complete with a monitored power supply.

The assembly as supplied provides the following features:
- ACTpro 4000 2 Door controller.
- ACTpro 200 2 Door controller door station.
- Up to 60,000 Users.
- Connection to PC over TCP/IP, USB or RS232/RS485.
- 3 Amp Regulated Power Supply with battery backup provision.
- Steel Cabinet (thickness 1.2mm) with hinged lid.
- Space for two 7Ahr batteries (not included).
- Monitored power supply with automatic battery test.
- 2 fused outputs for door locks.
- PSU status (AC fault, battery low) reported to controller and to The ACTWin pro software.
- Deep-Discharge protection of batteries.
- 20mm 'knockouts' provided for external wiring at top and sides.
- 40mm holes in the back of the cabinet for rear wiring entry.

Product Specification

Mains Supply

Mains Voltage	230 VAC + 10% / -15%
Frequency	50 Hz
Main Fuse	630 mA
Output Voltage (Output 1 and Output 2)	12 V DC fused at 1.25 Amp

Installation Notes

- On receipt the unit should be unpacked and inspected to ensure that no transit damage has occurred.
- Mount the ACTpro 4200 directly to the wall with the supplied screws.
- The unit must be mounted in a well-ventilated area that allows for accessibility after installation and must not be adjacent to combustible materials or in an area that exceeds temperatures of 45°C. Adequate ventilation should be provided to keep the unit cool and the ventilation slots around the cabinet should not be covered.
- Mains power should be connected to the ACTpro 4200 by a licensed electrician in accordance with local and national codes.
- For continued protection against fire hazard, replace fuses with the same type and rating.
- A protective EARTH must be provided for safety in accordance with EN61010 Part 1 : 1993 : Clause 6.5.1.
- An appropriate Mains Isolation switch (Mains on/off) should be fitted between the AC input of the unit and the equipment electrical supply plug to allow equipment servicing.
- Before any maintenance of the product, ensure mains is disconnected.

Ordering Information

Model	Description	Part Number
ACTpro 4200	4 door controller & 12 V DC 3amp power supply	ACTpro 4200

Power Budget Calculation

The power supply output is 12 Volt DC supplying a max of 3amps.

This is sufficient to power the ACTpro 4200 and up to 8 readers and the battery recharge.

ACT recommends the use of a separated power supply for the locks.

The power budget calculation below shows that when all the 4 doors of the ACTpro 4200 are used with ACTpro-X Entry and Exit readers that the total current consumption is 2000mA. This gives headroom of 1000mA.

Item	Current(mA)
ACTpro 4200	460
Door 1 Entry **ACTpro-X** Reader	80
Door 1 Exit **ACTpro-X** Reader	80
Door 2 Entry **ACTpro-X** Reader	80
Door 2 Exit **ACTpro-X** Reader	80
Door 3 Entry **ACTpro-X** Reader	80
Door 3 Exit **ACTpro-X** Reader	80
Door 4 Entry **ACTpro-X** Reader	80
Door 4 Exit **ACTpro-X** Reader	80
Battery 1 Recharge current	300
Battery 2 Recharge current	300
Safety Margin	300
Total	**2000**
Headroom	**1000**

Battery Back Up

- After a mains power failure the ACTpro 4200 will continue to operate while the batteries have a sufficient charge.
- There is room in the cabinet for two 7Ahr batteries giving a total of 14Ahrs.
- The length of time these batteries will last depends on the power consumption.
- Use of Battery 1 is recommended.
- Battery 2 can be used if a longer operation time without a mains supply is required.
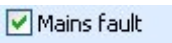
Battery 1:

- By default Battery 1 is used to provide the backup power to the ACTpro 4200 and all the readers.
- The duration for which the battery can provide backup power can be calculated by dividing the battery rating by the total current draw.
- In the example from the power budget above the total current draw is 1100mA or 1.1A. This figure is calculated by the ignoring the recharge currents which don't apply when the battery is supplying the current and ignoring the Safety margin which is obviously not a current draw.
- Given a battery capacity of 7Ahr and the calculated current draw of 1.1A. Then the battery will last for 7/1.1 = 6.36 Hrs

Battery 2:

- The second battery maybe used to provide a longer battery backup period. In this case the ACTpro 4000 should be connected to the OUTPUT 2 supply.
- Battery 1 will power the ACTpro 200 and 4 readers. Battery 2 will power the ACTpro 4000 and 4 readers.
- The ACTpro 4000 consumes 360mA max and so battery 2 will have the greater current draw and so will be the limit on the total battery backup period.
- Calculating the current draw is 360mA + 80mA + 80mA + 80mA + 80mA = 680mA = 0.68A
- Battery can provide power for 7 / 0.68 = 10.29 Hrs.

Configuring the ACTpro 4200

1. Connect the ACTpro-X readers to the ACTpro 4200.

2. Connect the locks to the relay outputs, of the ACTpro 4200.

3. Connect the door contacts and push to exit buttons to the ACTpro 4200.

4. Connect the 7AHr batteries, at least one is recommended connected to Battery 1.

5. Test the ACTpro 4200 by pressing the battery enable switches above the batteries. This will connect the batteries to the system and allow the ACTpro 4200 to operate

6. Connect either the TCP / IP or the serial cable for connection to the ACTWin software

7. Check that ACTpro 4200 powers up.

8. Check that both the green battery LEDs are on steady.

9. The red NETWORK LED in the centre of the board should flash rapidly indicating communications with the controller.

10. Close the cabinet lid over.

11. Apply mains power (mains should be connected by a qualified installer)

12. Check that the controller does not report any door offline. Ensure there are no faults reported on the controller display.

13. For ACTWin pro users, make sure the ***Mains Fault*** box is ticked for the ACTpro 4200 doors 3 & 4.

14. Tamper on the ACTpro4200 will be reported as door 3. Therefore in ACTWin software disable tamper reporting on door 1 and enable it on door 3.

15. Download the database.

16. The ACTWin pro software should display the doors as blue icons.

17. Check that cards/PIN codes grant access and open the doors.

ACTpro 4200 Installation

4 Door Controller and Monitored Power Supply

DOOR 1

OUTPUTS 1
OP3
OP2

INPUTS 1
PUSH
BUTTON
DOOR
CONTACT
AUX
INPUT

READER 1
GREEN
RED
0V
+12V
DATA
CLOCK
SENSE

ENTRY/EXIT

LINK
SPEED

NETWORK 2
+5V 0V
A B 0V

NETWORK 1
A B 0V

DOORS
A B 0V

SERIAL/PRINTER
0V RX TX

AUX RLY 1
NC C NO
RELAY 1
NO C NC

AUX RLY 2
NC C NO
RELAY 2
NO C NC

MAINS
PRESENT
+12V +12V +12V 0V

OUTPUTS 2
OP3
OP2

INPUTS 2
DOOR
CONTACT
PUSH
BUTTON

READER 2
GREEN
RED
0V
+12V
DATA
CLOCK
SENSE

ENTRY/EXIT

DOOR 2

OUTPUT 1 OUTPUT 2
12V 0V 12V 0V

Fuse OP1
Fuse OP2
Fuse OP2 B/Batt
Fuse OP1 B/Batt

Press to
correct batteries

BATTERY 1
BATTERY 2

Battery 1 - Backup for
Output 1 **and PCB**
*Always connect Battery 1.

Battery 2 - Backup for
Output 2
Monitoring for battery 2 can be disabled
by setting dipswitch 3 to ON

*Connect Red to Battery positive
Black to Battery negative

AC AC

EXT LED

Entry/Exit Reader

Cable: 8 Core Screened
Belden 9504 or equiv

SENSE
CLOCK
DATA
+12V
0V
RED
GREEN
+12V

NO C NC NO
NC C NO
NC

+12V
GREEN
RED
0V
+0V
DATA
CLOCK
SENSE

DOOR 3

PB1
DC1
AUX INPUT
OP3

PB2
DC2
AUX INPUT
OP3
OP2

0V A B 0V

DOORS
NETWORK

DOOR 4

To additional Doors Stations if required.

Technical Specifications

Mains Voltage	230Vac +10% -15%
Mains Fuse	630mAmp
Secondary AC Fuse	3.75 Amp Th Fuse
Fuse OP1	1.25 Amps Quick
Fuse OP2	1.25 Amps Quick

WARNING:
MAINS VOLTAGE
DISCONNECT BEFORE MAINTENANCE

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 ACTpro4200.

The wiring for adding additional
doors/stations for the Doors Network is:

A	to	A
B	to	B
0V	to	0V

Typical Mag lock wiring

Door

12V 0V

Important !
Always Place Varistor
Across Lock Terminals

N/C C N/O N/C C N/O
AUX RLY 1   RELAY 1

This illustration shows wiring for
normally energised locks.
If normally de-energised locks
are required, use the N/O relay contacts.

Typical Reader Wiring

Cable: 8 Core Screened
Belden 9504 or equiv
Max Length 30 Meters

SENSE
CLOCK
DATA
0V
+5V
RED
GREEN
+12V

White	SENSE
Green	CLOCK / DATA 1
Blue	DATA / DATA 0
Red	+5V or +12V
Black	0V
Brown	RED
Yellow	GREEN
Orange	(Buzzer Control)

Typical Door Contact and Push to Exit Wiring

OP3
OP2
0V
AUX
INPUT
DOOR
CONTACT
PUSH
BUTTON