ACT365-ACU / ACT365-ACU2A / ACT365-ACUPoE

Installation Instructions

VANDERBILT

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ACT365-ACU & ACT365-ACUPoE

Hereby, Vanderbilt International (IRL) Ltd declares that this equipment type is in compliance with the following EU Directives for CE marking:
• Directive 2014/30/EU (Electromagnetic Compatibility Directive)
• Directive 2011/65/EU (Restriction of the use of certain hazardous substances Directive)
The full text of the EU declaration of conformity is available at: http://van.fyi?Link=DoC

ACT365-ACU2A

Hereby, Vanderbilt International (IRL) Ltd declares that this equipment type is in compliance with the following EU Directives for CE marking:
• Directive 2014/30/EU (Electromagnetic Compatibility Directive)
• Directive 2014/35/EU (Low Voltage Directive)
• Directive 2011/65/EU (Restriction of the use of certain hazardous substances Directive)
The full text of the EU declaration of conformity is available at: http://van.fyi?Link=DoC

http://van.fyi?Link=ACT365ACU

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1 Overview

This guide describes the installation of the ACT365-ACU controller.

The ACT365-ACU Controller is a single door IP controller that requires an external 12V or 24V power supply.

The ACT365-ACU2A Controller is a single door IP controller with a 12V DC 2A PSU.

The ACT365-ACUPoE Controller is a single door IP controller that is powered over Ethernet.

Sign up to ACT365 via www.act365.eu.

1.1 Technical specification

	ACT365-ACU	ACT365-ACU2A	ACT365-ACUPoE
Voltage Range (Controller)	11–24V DC	11–24V DC	11–24V DC
Current Consumption (Controller)	350mA (Max)	350mA (Max)	350mA (Max)
Controller Dimensions (H x W x D mm)	165 x 235 x 55	275 x 330 x 80	275 x 330 x 80
Controller Weight (kg)	0.4	2.2	2.2
Operating Temperature	-10 to +50° C	-10 to +40° C 75% RH non-condensing	-10 to +40° C 75% RH non-condensing
Operating Environment	Surface mounting Internal use only	Surface mounting Internal use only	Surface mounting Internal use only
Enclosure Material	ABS	1.2mm steel grey powder coated	1.2mm steel grey powder coated
LED Status Indicators	Yes	Yes	Yes
PSU Fault Output	n/a	Yes	Yes
Lid Opening Tamper Detection (Front)	Yes	Yes	Yes
Rear Tamper Detection	No	Yes	Yes

1.1.1 Electrical specification

	ACT365-ACU	ACT365-ACU2A	ACT365-ACUPoE
PoE 802.3bt input (PoE++)	N/A	N/A	13.8V at 3A output + 0.5A battery charge
PoE 802.3at input (PoE+)	N/A	N/A	13.8V at 1A output + 0.5A battery charge

	ACT365-ACU	ACT365-ACU2A	ACT365-ACUPoE
PoE 802.3af input (PoE)	N/A	N/A	13.8V at 0.3A output + 0.5A battery charge
Battery charging	N/A	Yes	Yes
Standby Battery	N/A	12V 7Ah Battery	12V 7Ah Battery
Battery Deep Discharge Protection	N/A	No	Yes
Input: Voltage Rated	N/A	100–240V AC	N/A
Input: Voltage Operating	N/A	90–264V AC	N/A
Input: Frequency	N/A	50–60Hz	N/A
Input: Max Current	N/A	1.0A (@ 90V AC)	N/A
Input: Mains input fuse	N/A	T2.0A	N/A
Input: Max standby power	N/A	0.5W (no load and no battery connected)	N/A
Output: Voltage	N/A	13.4–14.2V DC (13.8V DC Nominal) on mains power 10.0–12.3V DC on battery standby	N/A
Output: Max load current	N/A	2.0A	N/A
Output: Ripple	N/A	150mA pk–pk max	N/A
Output: Load output fuse	N/A	F2.0A	N/A
Output: Overload	N/A	Electronic shutdown until overload or short circuit removed (Under mains power only)	N/A

1.2 Ordering details

ACT365-ACU	V54502-C130-A100	Single door cloud IP controller
ACT365-ACU2A	V54502-C131-A100	Single door cloud IP controller with 2A 12V DC PSU
ACT365-ACUPoE	V54502-C132-A100	Single door cloud IP controller with PoE PSU

1.3 Monitoring

All faults including Mains Present and Tamper are reported on the ACT365 portal.

Mains present	For the ACT365-ACU, the PSU MAINS PRESENT output is pre-wired to the AC MON input.

Output Voltage	For the ACT365-ACU, the PSU output voltage level is reported to the ACT365 portal.
Tamper / Break Glass	All faults, including tamper and break glass, are reported to the ACT365 portal.

2 Installation

The ACT365-ACU Controllers are for indoor installation only and must be installed as permanently connected equipment.

An external mains disconnect device must be fitted. Before installation, ensure that the mains supply to the controller is disconnected.

Mains power should be connected to ACT365 Controllers by a licensed electrician in accordance with local/national codes.

After installing an ACT365 controller, Vanderbilt recommend that you place the provided ferrite bead (a noise suppression device, supplied in a ziplock bag) around the Ethernet cable near the RJ45 connector to attain a desired level of electromagnetic compatibility (EMC).

2.1 ACT365-ACU

2.1.1 Mounting

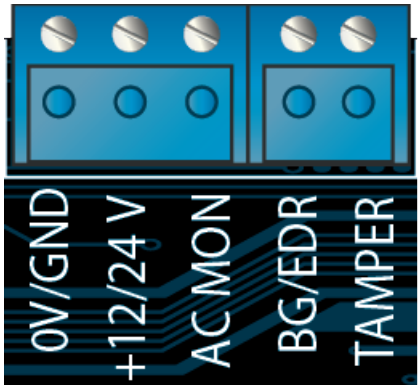
Mount the ACT365 Controller directly on to the wall with the supplied screws.

The keyed mounting hole should be screwed first to the wall to aid the mounting.

The unit should be installed in a ventilated area that allows for accessibility after installation.

2.1.2 Power supply

The ACT365-ACU requires an external 12V DC or 24V DC power supply. The supply should be connected to the +12/24V DC and 0V/GND connections.



2.2 ACT365-ACU2A

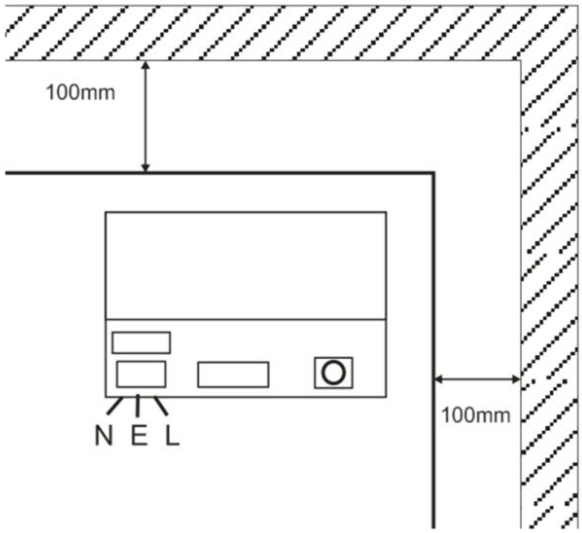
This unit is only suitable for installation as permanently connected equipment.

- The PSU is not suitable for external installation.
- Equipment must be earthed.

Before installation, ensure that external disconnect device is OFF. The PSU should be installed via a 3A fused spur according to all relevant safety regulations applicable to the application.

2.2.1 Mounting

1. Mount securely in correct orientation allowing minimum clearance – see diagram.



2. Route mains and low voltage output cables via different knockouts and/or cable entry holes.
3. Use bushes and cable glands rated to UL94 HB minimum.

2.2.2 Mains power up

1. Attach correctly rated mains cable (minimum 0.5mm^2 [3A], 300/500V AC) and fasten using cable ties.
2. Apply mains power and:
   - Check for 13.8V DC on load outputs.
   - Check green Mains LED is on.
3. Disconnect mains power.

2.2.3 Load Output

1. Attach correctly rated load cable and fasten using cable ties. Note polarity.
2. Apply mains power and check green Mains LED is on.

   Note: Red LED may be illuminated (dependent upon model) to indicate that no battery has been connected. This is normal.
3. Verify load is operating correctly.
4. Disconnect mains power.

2.2.4 Standby Battery

Note: Ensure batteries being fitted to this unit are in good condition

1. Connect battery leads to battery, ensuring correct polarity of battery connections. Vanderbilt recommend using a 7Ah battery.
2. Apply mains power and check that the green Mains LED is on.
3. Check there is no fault indication on Red LED (dependent on model).
4. Disconnect mains power.
5. Check that the batteries continue to supply voltage and current to the load.

   The Green LED should be off.

Note: Batteries must have sufficient charge to supply the load.

6. Reconnect mains power.

   Green LED should be on.

7. Remove Load fuse and check that the red Fault LED is on (dependent on model).

2.2.5 Tamper

A tamper condition is reported in software.

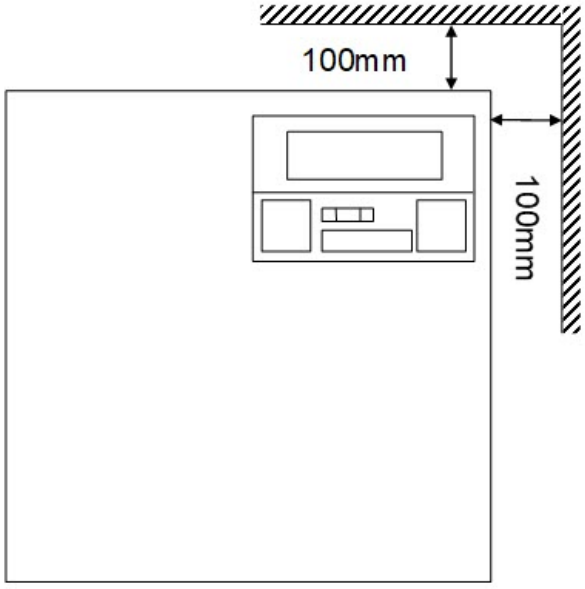
1. Check that the tamper switch is:
   - Closed when the enclosure is mounted on the wall, lid is closed, and the lid screw is fitted.
   - Open when the lid is open.
2. Close cover and secure using fastening screw(s) provided.

2.3 ACT365-ACUPoE

This unit must be fed from a compliant PoE (power over Ethernet) power source (PoE 802.3bt for 3A power output).

2.3.1 Mounting

1. Mount the boxed module securely using the enclosure mounting points in the correct orientation, allowing 100mm clearance around the enclosure – see diagram.



2. Route cables via knockouts and/or rear cable enclosure entry holes.

2.3.2 Power Up

1. Attach correctly rated load cable to load equipment and fasten using cable ties.

   Note polarity.

2. Attach suitable Ethernet cable from PoE++ source to POE IN RJ45 connector (100m max from PSE).
3. Attach suitable Ethernet cable between IP device and DATA RJ45 connector (if required).
4. Connect charged 12V battery 7Ah to the other end of battery cable.

   Note: Ensure correct polarity of battery connections: + use Red lead, - use Black lead.

5. Observe Green LED is ON when PoE is present.
6. Observe Load equipment indicates power is present.
7. Remove POE IN cable and observe load equipment continues to indicate power is present.
8. Reconnect PoE INPUT cable.

2.3.3 Troubleshooting

In the event of loss of PoE++ to the ACT365-ACUPoE, the PoE Fault signal contact will open and the Green LED will turn off, the ACT365-ACUPoE will continue to deliver up to 13.8V 3A of power to the load until the battery reaches its Deep Discharge protection limit.

If the output of the ACT365-ACUPoE fails, the cause of the failure should be investigated, for example, a short circuit load, or connection of a deeply discharged battery. The fault should be rectified before restoring power to the ACT365-ACUPoE. If any of the fuses require replacing, ensure the correct fuse rating and type is used. A spare fuse is supplied with the controller.

Battery charging will only start after a compliant PoE power source is connected to ACT365-ACUPoE, it will not start up on battery. Ensure only a healthy 12V battery is fitted to the system.

2.3.4 Tamper

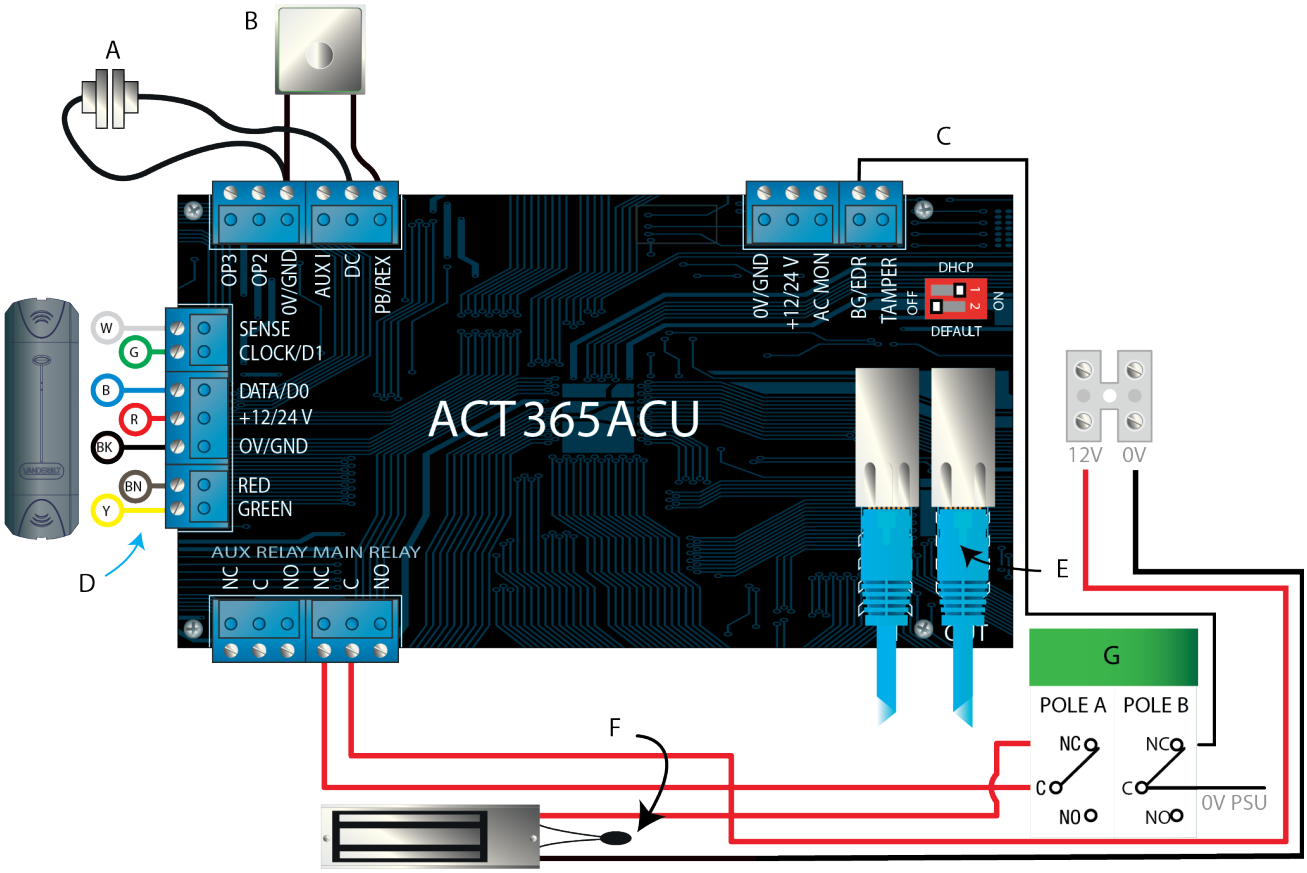
A tamper condition is reported in software.

1. Check that the tamper switch is:
   - Closed when the enclosure is mounted on the wall, lid is closed, and the lid screw is fitted.
   - Open when the lid is open.
2. Close cover and secure using fastening screw(s) provided.

3 Wiring

This sections describes the following.

3.1 Typical wiring of ACT365-ACU



Label	Description	Label	Description
A	Door contact, normally closed	E	Ethernet: RJ45 **Note:** All IP device must have a valid IP Address.
B	Push to exit, normally open	F	**Important:** Place varistor across all lock terminals. **Note:** Diagram shows normally energised Magnetic Lock.
C	Break glass monitoring, normally closed	G	Break glass unit (double pole)

Label	Description	Label	Description
D	Vanderbilt reader wire colour coding		

3.1.1 Wiring exit readers

For clock and data readers, wire exit readers in parallel but leave the sense line unconnected.

For Wiegand readers, wire the DATA 0 of the exit reader to the SENSE pin on the ACT365-ACU and DATA 1 to the CLOCK/D1 pin on the ACT365-ACU.

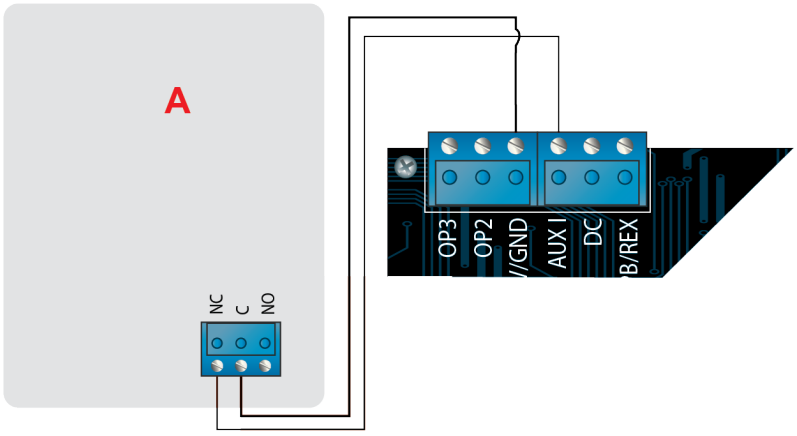
Max length: 100m with 12V DC

Cable: 8 core screened Belden 9504 or equivalent

3.2 Fire override configuration

To release doors on fire alarm activation:

1. On the ACT365 customer portal, select the site from the site picker.
2. Under **Manage Sites > Site Settings**, select the door group containing fire doors from the **Fire Door Group** drop-down list, then click **Save**.
3. Wire the fire alarm panel (A) to the controller as shown:



While the 0V signal is maintained at the AUX input on Door 1, the doors in the **Fire Doors** group maintain normal operation.

When the 0V signal is removed, the doors in the **Fire Doors** group are unlocked. The fire doors remain unlocked until the 0V signal is restored.

3.3 Interlock/airlock configuration

To allow only one door to open at a time:

1. Wire the airlock doors.

   Link OP3 and AUX I for each new door. For example, the following diagram shows how to interlock two doors: when the first door is open, the second door is locked, and vice versa.

To interlock additional doors, continue linking OP3 and AUX I for each new door.

2. On the ACT365 customer portal, select the site from the site picker.
3. Under **Access Control > Doors**, for each interlock door:
   a. Click the door name on the **Doors** screen.
   b. Select the **Interlock** check box on the **Update Door** screen.
   c. Click **Save**.

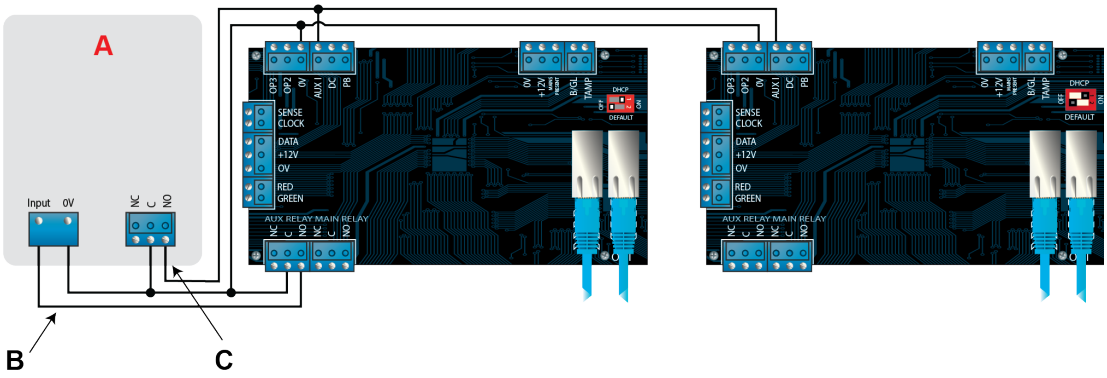
When **Interlock** is enabled on a door, the door is locked when the AUX input is active.

When the door is open, OP3 is active and pulls Aux I low (0V) on all interlock doors.

3.4 Intruder panel wiring

To arm/disarm an intruder panel:

1. Wire the intruder alarm panel to the controller as shown:



A	Intruder alarm panel
B	Connect the AUX Relay output from the controller to arm input on alarm panel. The AUX Relay can be set to pulse or toggle. Toggle by programming the AUX Relay time to zero.
C	Connect a signal from the alarm panel to indicate armed or disarmed status. If 0V is connected to AUX Input, the panel is armed.

2. Wire the door from which the system will be armed/disarmed.
3. On the ACT365 customer portal, select the site from the site picker.
4. On the ACT365 customer portal, program the ACT365-ACU:
   a. Click **Access Control > Doors > *<Door Name>***.
   b. Under **Aux Relay**, select the **Arm Intruder Panel** check box.
   c. Under **Operation**, select the **Intruder Panel** check box.
   d. Click **Save**.
5. On the ACT365 customer portal, grant arm/disarm rights to users:
   a. Click **Access Control > Cardholders > *<Card Holder Name>***.
   b. Under **Options**, select the **Arm/Disarm** check box
   c. Click **Save**.
6. To arm the system, a user with arm/disarm rights should press the tick key on the keypad then present their card. Once the intruder panel is armed (as monitored by the AUX I PIN), the Door

will lock.

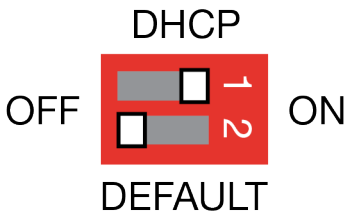
7. To disarm the system, a user with arm/disarm rights should press the tick key on the keypad then present their card.

If multiple doors should lock when the intruder panel is armed then each door must monitor the alarm status.

If the intruder panel is not being monitored then only the door that is wired to control the intruder panel will lock.

4 Defaulting the Controller and IP Address Configuration

The ACT365-ACU has two DIP switches.



- DIP switch 1: DHCP

  Enables DHCP or Static IP address mode.
- DIP switch 2: DEFAULT

  Defaults the controller or the Static IP address.

4.1 Factory default the Controller (DIP switch 2)

The ACT365-ACU Controller may be defaulted to factory settings. This will completely erase the controller memory. All information including card details will be erased and the static IP address will be reset to 192.168.1.60.

To default the ACT365-ACU Controller:

1. Power down the ACT365-ACU Controller.
2. Set the **DEFAULT** DIP switch 2 to **ON**.
3. Hold down the Tamper spring.
4. Apply power to the ACT365-ACU Controllers.
5. Wait approximately 5 seconds, until the controller confirms default completed by sounding the buzzer.
6. Release the Tamper.
7. Power down the ACT365-ACU Controller.
8. Set the **DEFAULT** DIP switch to **OFF**.
9. Re-apply power.

4.2 DHCP/static IP addressing (DIP switch 1)

The ACT365-ACU Controller is shipped with the DHCP enabled and can be configured to obtain an IP address from a DHCP server or use a static IP address.

1. Power down the ACT365-ACU Controller.
2. Set DIP switch 1 to its new position.
   a. DHCP IP addressing: Move DIP switch 1 to **ON**
   b. Static IP addressing: Move DIP switch 1 to **OFF**

   Note: Default static IP address is **192.168.1.60**.
3. Re-apply power to the board.

4.3 Defaulting the static IP address

The static IP address can be reset to the default value of 192.168.1.60.

1. Power down the ACT365-ACU Controller.

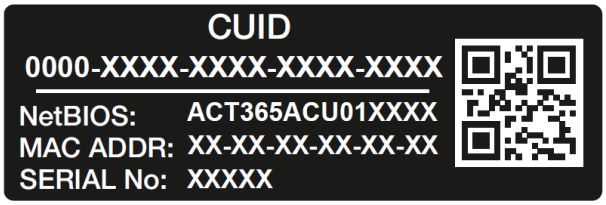
Ensure nothing is connected to the tamper input terminal and the tamper spring is not pressed, otherwise the following steps will factory default the controller losing all information.

2. Set the DHCP DIP switch 1 to **OFF**.
3. Set the DEFAULT DIP switch 2 to **ON**.
4. Re-apply power.
5. Wait approximately 5 seconds, until the controller confirms default completed by sounding the buzzer.
6. Remove power.
7. Set the DEFAULT DIP switch 2 to **OFF**.
8. Re-apply power.

   Note: The static IP address can be changed via the web interface.

4.4 Changing static IP address on the ACT365-ACU

1. Connect the ACT365-ACU Controller to the IP network.
2. Open a web browser on a PC (for example, Microsoft Internet Explorer, Google Chrome, etc.).
3. Enter http://<NetBIOS address>, e.g. http://ACT365ACU010049



4. Logon details:

   Username: *installer*

   Password: *999999*

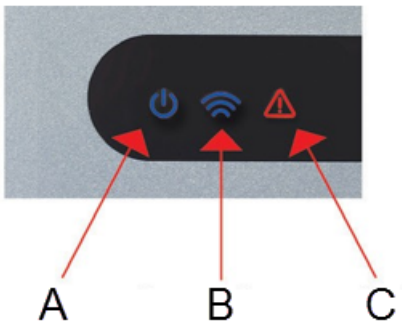
5. Choose the **Communication** menu and set the following:
   - **Static IP Address**
   - **Network Mask**
   - **Default Gateway**
6. Click **Save IP Settings**.

   Note: Use the new IP address when connecting to the controller.

5 Door Controller Status Indicators

5.1 ACT365-ACU

Status indicators appear on the front of the ACT365-ACU Door Controller.



The meaning of each indicator is described below.

(A) Power / System Running

This indicates that the ACT365-ACU has power.

(B) Communications

Constant illumination indicates that the ACT365-ACU is connected to the ACT365 service.

Flashing indicates that there is an issue connecting to the ACT365 service.

(C) Fault

Illuminates to indicate a fault on the system.

Possible causes are:

- Tamper open: ACT365-ACU housing is not closed.
- Break Glass: ACT365-ACU Controllers provide a method to monitor an Emergency break glass switch via the BG/EDR input. The fault LED will illuminate if the Emergency break glass switch is activated.
- Mains Fault: ACT365-ACU will accept a mains present signal from a PSU. This is wired into AC MON input on the PCB. When the PSU has no mains supply the fault is active.
- Low Supply Voltage: When voltage to the +12/24V terminal is less than +9V.
- Fuse Blown: The +12/24V output on the READER terminals is current limited to provide short circuit protection. The Fault LED will illuminate if too much current is drawn from this connection.
- The ACT365-ACU cannot connect to the ACT365 service.

5.2 ACT365-ACU2A and ACT365-ACUPoE

Fault indication

Mains present

Data and design subject to change without notice.

Supply subject to availability.

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