



ACU Bus - New node, ACU reset and other events

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2. What event types relate to the ACU bus?
3. What might it mean if I am seeing these events?
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5. How to methodically connect controllers together (process)
 1. connect one slave, fully configure and make sure it is working
 2. connect the next...

What is the ACU bus?

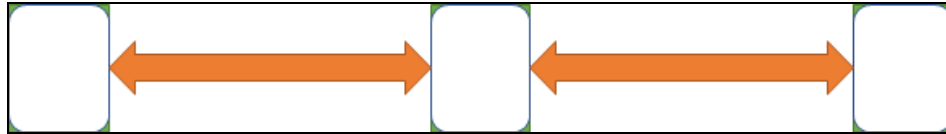
ACU = Access Control Unit

This abbreviation is commonly used to describe an access control controller.

Bus = a communication line which usually includes multiple 'nodes' or things need to communicate

The ACU bus is the communication channel and cabling used by the controllers to talk to each other.

With our system the ACU bus uses RS-485 as the protocol and it is a point to point topology - where each line/cable is a direct connection between two controllers.



Because the cable is terminated at each controller, you are able to have a large distance between each controller and the total cable length through the chain can be much greater.

Which event types relate to the ACU bus in some way?

The most common events you will see if you have an ACU bus on your site are:

- ACU Bus Reset
- ACU Bus New Node

What does it mean when I see these events?

ACU Bus Reset

The ACU Bus Reset event indicates that a change has been detected in the configuration of the bus and so the initialisation process has been run.

This could happen if:

- the master controller is power cycled (it will perform this process each time it starts up)
- controllers are added or removed to the ACU bus

If you are seeing lots of these events and there are no changes being made to the ACU bus then there could be an issue with how the ACU bus has been installed or configured.

Following the instructions in the next two sections will usually resolve any issues.

ACU Bus New Node

The new node event usually follows an ACU bus reset event and indicates that a new controller has been found on the ACU bus.

If you have a site with a master controller and, say, 5 expansion controllers then you should expect to see an ACU bus reset event followed by 5 ACU bus new node events (identifying each of the expansion controllers).

Electrical best practice when working with the ACU bus

We recommend Belden 9841 single twisted pair with braid to ensure best performance and noise immunity.

Other cables may work under some circumstances (short distances with little or no electrical noise) but we will always recommend using an appropriate RS-485 cable and may only be able to offer limited support for issues on sites where the incorrect cable has been used.

As highlighted in the datasheet and product instructions - use the twisted pair to carry your RS-485 A and B signals. Use the cable braid to connect the 0V at each end of the cable.

Using the braid to connect to 0V at each end has two functions:

1. it ensures a 'common ground' or 'common 0V' across all controllers, so that the communication voltage levels have the same reference point.
2. It helps to minimise the impact of any environmental electrical noise on the communication signals
3. Ensure all spare cores are terminated at 0V – **DO NOT LEAVE ANY SPARE CORES UNTERMINATED.**

Ideal process for setting up or resetting an ACU bus

To ensure that your ACU bus remains stable and works effectively, we recommend the following process:

In the following instructions we assume that you have already physically installed all of the cabinets and all of the necessary cabling has already been routed through the site.

1. Start with all controllers switched off and all ACU bus cables **disconnected**
2. Power up the master controller and download all necessary configuration through the website
3. Confirm the controller is fully configured and stable
4. Connect the ACU bus cable to the master controller
5. Connect the ACU bus cable to the first expansion controller in the chain
6. Power up the first expansion controller in the chain and download all necessary configuration through the website
7. Confirm that all controllers are fully configured and stable
8. Connect the ACU bus cable to the next expansion controller in the chain
9. Power up the next expansion controller in the chain and download all necessary configuration through the website
10. Confirm that all controllers are fully configured and stable
11. Continue as above until all controllers are connected and configured

If you require any further technical assistance, please do not hesitate to contact our technical team on:

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