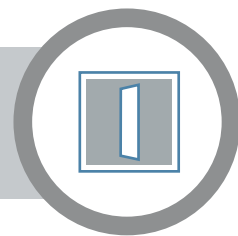


Janus C4 485 Line Header Installation Guide



Part number: JC4-ADV-C2-LH

The Janus C4 485 Line Header is an access control system controller for use with Janus C4 host software. It allows the communication of other either Single Controllers (Part No: JC4-ADV-C2-SNG) and/or Multi Controllers (Part No: JC4-ADV-C2-MLT) on a RS 485 communication line. The Janus C4 485 Line Header is connected to the IP network and allows communication to the other controllers on the RS 485 line.

The 485 Line Header can be used with different power supplies: a 12V external power supply (up to 5A), or POE/POE+. It has an integral case with built in optical tamper. The controller supports both IP and RS485 host communications.

Note: The Line Header can support up to **6 controllers maximum** on an RS-485 line, the controllers can be a mixture of Single and Multi-Controllers. If more than 6 controllers are required to communicate on RS-485 then multiple Line Headers would be required.



Specification

Overview	Janus C4 485 Line Header
Power Input	12V (5A input), POE, POE+
Host Communications	Ethernet 10/100 BASE-T or RS485 2-wire 19.2k baud
Battery (optional)	4.2V Lithium Polymer (Grosvenor supplied, part no: ADV-BAT-S)
Tamper	Optical Tamper
USB	Dual USB 2.0 Type A (future use)
Operating Temperature	0 to +49°C (32 to 120°F)*
Humidity	5-85±5% at 30±2°C (86±4°F)
Weight	495g
Dimensions	242 x 167 x 46 mm

* When using the Lithium Poly optional battery back-up, max continuous ambient temperature is limited to 30°C (86°F)

Electromagnetic Compatibility

This product complies with the following standards, following the provisions of EMC Directive 2014/30/EU:

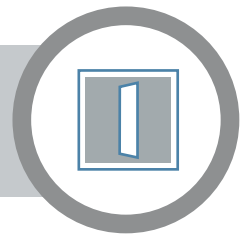
- EN 55022:2010 Class B
- EN50130-4:2011 inc A1:2014
- IEC 62599-2:2010

WEEE

Please refer to www.grosvenortechnology.com/legal-info/ for disposal instructions under EU Directive 2012/19/EU



Connections



Battery
A Lithium Polymer 6,000mAh battery to provide a battery back-up service during power outages.

Only the battery supplied by Grosvenor (Part No. ADV-BAT-S) may be used. See *Notes* on page 4.

Reset
Use only when requested by Grosvenor Technical Support.

Load/Clear
Used to reset configuration data. See *Notes* on page 4.

Status LED
The Controller Status LED reports the controller state. See *Notes* on page 4.

RS485 Port
Used for host comms when RS485 is used to connect controllers. See *Notes* on page 5.

Optical Tamper
No connection is needed; the optical tamper is operational when the case is closed.

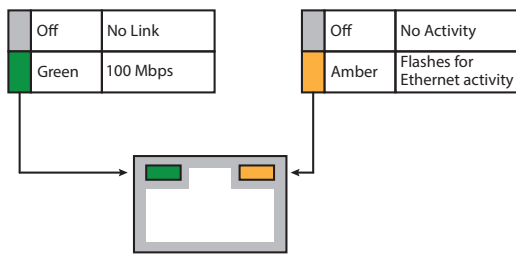
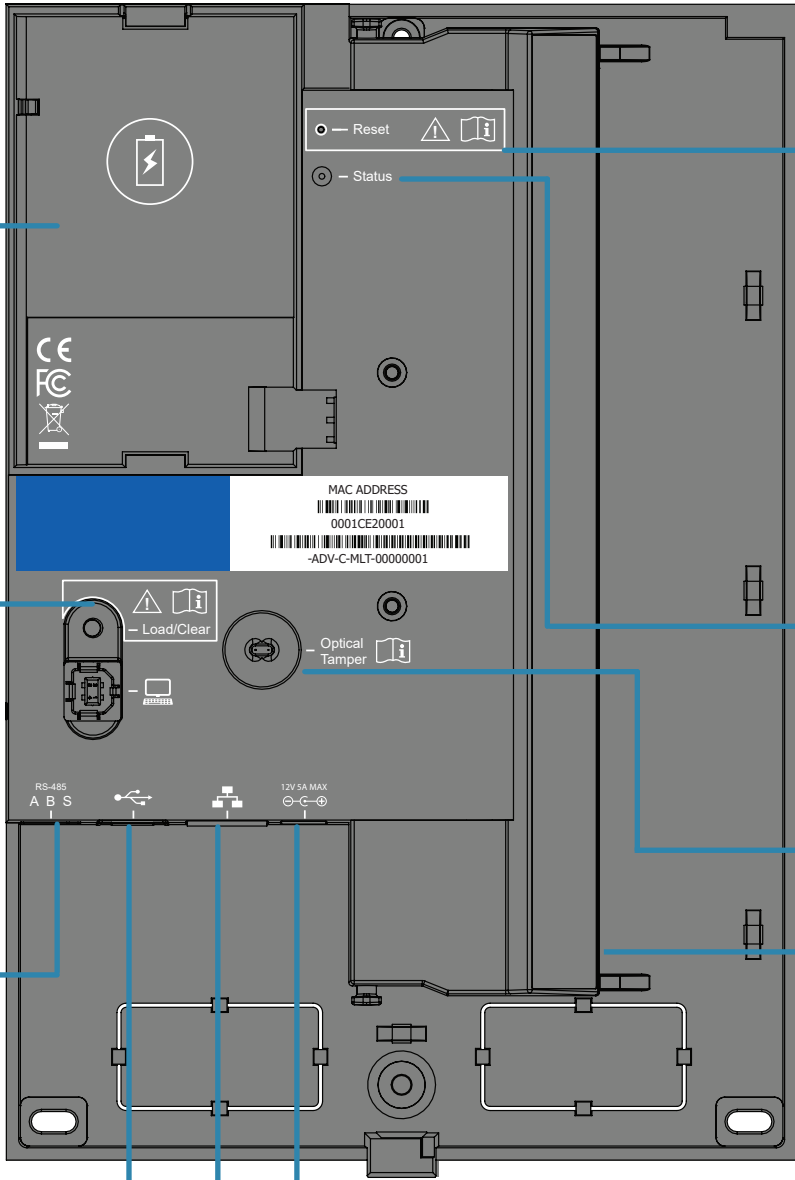
USB Ports
Two USB 2.0 Type A ports; intended for Grosvenor - approved products only. Can be used to update controller firmware. See *Notes* on page 5.

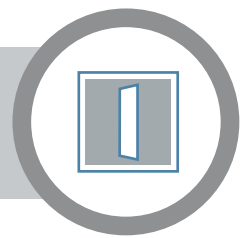
Ethernet Port
For IP host comms and required for configuration. 10/100 BASE-T Full duplex, POE/POE+

Ethernet Port indicators are shown below.

Power In
12V DC 5A Max
For full details of power options and requirements, see page 3.

Blade Connection
The 485 Line Controller cannot be used with any blades. Blades connected will not function.





The Janus C4 485 Line Header has a sophisticated power management system with a choice of input sources.

Input Power

Power to the controller may be provided by one of:

- 12V 5A (60W max) = 2.1mm Circular Jack (centre pin positive).
- PoE (IEEE 802.3.af = 12.95W max)
- PoE+ (IEEE 802.3.at = 25.5W max)
- If fitted, the 4.2V Lithium Polymer Battery (during power outage only)

It is the responsibility of the installer to ensure sufficient power is available for the system. When selecting the most suitable power supply, you need to balance the convenience of PoE against the total requirements.

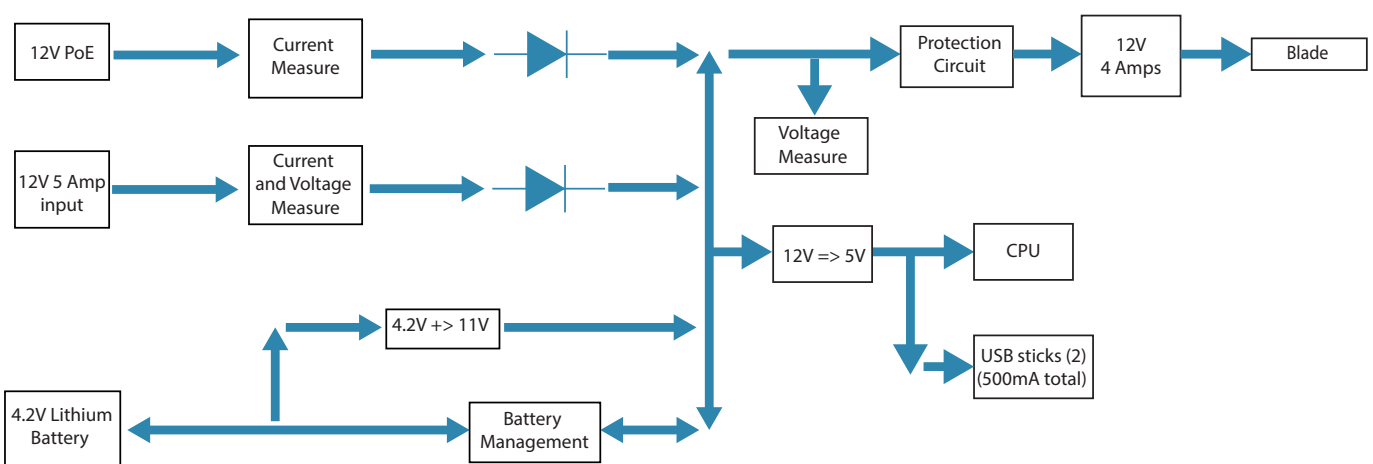
Output Power

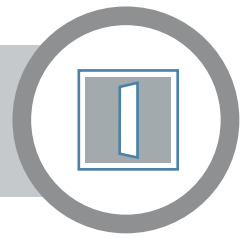
Power draw of the controller includes the following:

- Single-Blade Controller Quiescent Power = 250 mA max @ 12V (3.0W)
- Battery Charging power (if fitted, only while battery depleted) = up to 167 mA max @ 12V (2.0W)
- USB Power (future use, if fitted) = 260mA max @ 12V (3.1W)
- Blade Power (Door Blade = 1.0 W, I/O Blade = 4.0W)

Power supply	Supplied		Used by controller	
	Power (W)	Current (A)	Power (W)	Current (A)
PoE (IEEE 802.3.af)	11W	0.92A	5.0W	0.5A
PoE+ (IEEE 802.3.at)	21W	1.75A	5.0W	0.5A
12V external power supply (2.5A plug top)	30.0W	2.5A	5.0W	0.5A
12V external power supply (PSU3A-12(B))	36.0W	3.0A	3.0W*	0.33A*
12V external power supply (5A)	60.0W	5.0A	5.0W	0.5A

* Assuming no battery charging provision, as the specified PSU caters for an external battery.





Battery

The lithium polymer 6,000mAh battery may be used to provide a battery back-up service. Using a battery ensures continuing power to controller and all attached devices during power outages. Note though that all system data is retained in non-volatile memory indefinitely.

The battery operating time is heavily dependent on loading but will typically be up to 2 hours.

During battery operation, the 12V internal supply is reduced to 11V and the maximum permissible total current draw for all external sources is 1.5A.

The time required to charge the battery from depleted to full capacity is dependent on available power (for example, it may take longer from POE than from a 5A supply), external current draw and product temperature. It may take over 24 hours.

Battery Safety Notice

The 485 Line Header battery electronics contain multiple safety elements to protect against over-charge/discharge, short-circuit, over-temperature etc. However, the following warnings should be observed:

- Only fit the original battery module supplied by Grosvenor Technology and use only in accordance with this document.
- Do not use module if battery appears deformed or damaged.
- Do not disassemble, crush, pierce or rupture the battery.
- Do not short circuit or reverse polarise the module nor attempt to charge the battery except in the controller.
- Do not store at a temperature below -20°C (-4°F) or above +60°C (+140°F).
- Observe local regulations when disposing of the Lithium-polymer battery.
- Never dispose of the battery using heat or fire.

To initialize the 485 Line Header

To reload the application that shipped with the controller and delete all data.

- Press button while powered off and then power on, or press button before momentarily pressing Reset button. Hold until LED goes amber and then flashes amber after about 20 seconds, then release button.

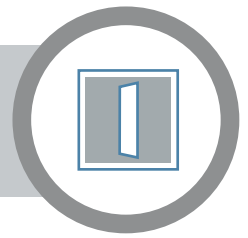
Status LED

The Controller Status LED can be monitored during installation and set up. It is not visible when the case is closed. The LED reports the controller state as follows:

Yellow medium flash	Off-line
Yellow fast flash	Port connected, not online
Green medium flash	On-line
Blue continuous	Controller initialising
Blue medium flash	Application initialising
Cyan fast flash	Wants data download
White slow flash	Firmware update in progress
White fast flash	Data download in progress
Red continuous	Configuration button pressed for less than 5 seconds
Red fast flash	Configuration button pressed for more than 5 seconds
Red slow flash	Error

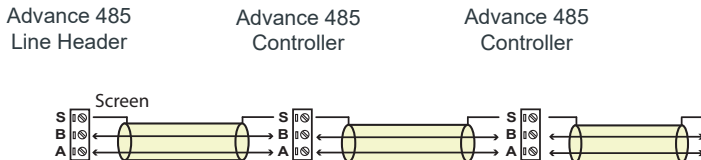
Battery Service Life

A battery service life of 5 years is possible, although this can be affected by a number of factors including: a prolonged period of storage prior to use, the number of discharge/charge cycles and the battery operating/charging temperature.



RS485 Connections

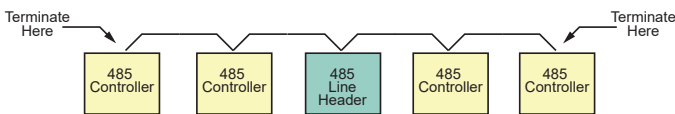
Up to 6 Advance controllers (either Single or Multis) can be daisy-chained together on a 485 line from a Line Header.



- A 485 Line Header must be configured before attempting to add RS-485 controllers.
- RS-485 only controllers must be configured via ethernet, when configuring an RS-485 only controller please choose the correct Line Header that the RS-485 controller will communicate too.
- The RS-485 only controllers will auto-address, once configured remove the ethernet connection and connect the controller to the Line Headers 485 line.

Note: When the Line Header or the RS-485 Only controllers are being added to the system, please do not disconnect the ethernet cable for at least 10 minutes, this is to ensure the application firmware is loaded correctly to the Line Header / RS-485 Only Controller.

Note: That the 485 Line Header doesn't have to be at the bus end, it can be anywhere. Fit a 120 ohm termination resistor at either end of the RS485 bus:



Note: That all Janus C4 Line Headers and 485 controllers require an Ethernet connection during the commissioning process.

Use Janus C4 Configurator to discover and bring the controller online. Once set up as the correct type and with the correct network settings, the Ethernet connection can be disconnected from 485 controllers.

Updating Firmware

The Controller firmware cannot be updated over a 485 connection as the files are too large.

If a firmware update is required while the controller has an IP connection the **Update Firmware** button will appear within the Quick Start app, enabling the process to be completed easily.

If a firmware update is needed subsequently, the firmware can be updated locally using a USB stick. This is a FAT32 formatted USB stick with firmware/app files in a "firmware" directory in the root directory.

Note: That a controller's current firmware version is shown in the Diagnostics tab, when the Controller is selected in the Configurator.

To update firmware

1. Open Janus C4 UI and select Navigation > Devices
 2. On the Devices tab, choose Controller and Right-click and select the Commands option
 3. Click the option Arm
 4. At this point, insert the supplied USB stick into the controller.
- Note:** You must insert the USB stick within one hour of selecting the Arm option. Note that no messages appear in Janus C4 during this process.
5. While the firmware file is being downloaded, the controller LED will show a slow white flash. When it is complete the LED shows a fast red flash. At this point you can remove the USB stick. If the USB stick is removed before the process is complete, the firmware will not be updated.

No messages are shown on the Janus C4 user interface.

For more information about Janus C4, visit the website or contact Technical Support:

Email: ac-support@grosvenortechnology.com
 Telephone: +44 (0)1279 838000
 Web: www.grosvenortechnology.com