

# Aircore EC+


## Quick Start Guide

This guide contains general procedures for Infinitum EC Aircore motors and is not intended to provide a full list of installation details, operation and maintenance.

These additional details can be found in the Infinitum [Aircore EC+ IOM Manual](#).

Only qualified personnel should install and operate Infinitum Aircore EC+ motors.


All motors have default settings.

 *This document includes Cautions and Warnings that should be read in advance of installation or operation. Failure to comply with safety procedures can cause serious injury or death and equipment damage.*

### Unpacking and inspection


Motors are tested and packed in individual crates or up to 6 motors per crate.

1. Inspect the motor packing for damages during shipping. If the package is damaged, remove the packing and inspect the motor for damage. Motor damage from shipping must be reported to the shipper.
2. Review the data on the nameplate with your purchase order to verify that you have received the correct motor. Compare data on name plate for desired power supply and control equipment requirements.
3. The motor may be provided with two lifting eyebolts and brackets to remove the motor from its packing crate. Thread the lifting eyebolt securely into the bracket before utilizing lifting devices.

 *Warning: To reduce the possibility of personal injury or death these eyebolts are intended to lift the motor and drive assembly only. Attaching the component it drives (i.e. fan, pump, etc.) may exceed the design weight limits of the eyebolts. Make sure the eyebolts are threaded completely into the motor housing to ensure they do not rotate out during lifting. Use an approved lifting device (crane) and sling to remove the motor from the packing crate.*

### Electrical supply and control wiring

Infinitum Aircore EC+ motors are pre-programmed to run utilizing inputs wired to the Communication Interface Module connections once the appropriate power connections are provided. The default configuration for all motors is Modbus RTU. Analog/Digital control is also available (user configurable).

 *Warning: The motor may be intended for connection to a solidly grounded wye supply. Connection to ungrounded, high impedance, or corner grounded systems may result in damage to the motor.*

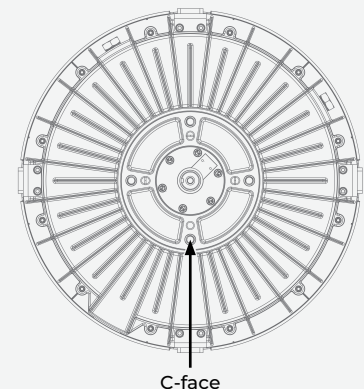
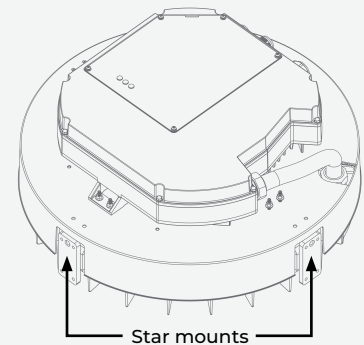
*The rotor in this motor incorporates a Permanent Magnet (PM) design. When the rotor is rotated a voltage is produced even when the motor is disconnected from a power source. Do not open electrical compartments or touch unprotected terminals while the rotor is turning. Disconnect motor supply power and allow one minute for capacitors to discharge before servicing or replacing.*



### Safety

Infinitum Aircore EC+ motors operate with high voltages and can cause serious or fatal injuries. Only qualified personnel should attempt installation, operation and maintenance of electrical equipment. Unsafe installation or use can cause conditions that lead to serious or fatal injury.

### Mounting



## Default control configuration and wiring requirements

Infinity Aircore EC+ motors are pre-programmed. See the [IOM Manual](#) for user selectable values.

### Control connections

Remove the VFD cover for access to Analog/Digital, Modbus and (optional) BACnet connections.

1. Relay (1) – NO / NC (COM must be used)
  - Max voltage: 125 VAC / 30 VDC
  - Max current: NO-10A VAC, 5 A
  - VDC: NC – 3A VAC or VDC
2. Digital input (4) – DIN1, DIN2, DIN3, DIN4
3. Digital output (2) – DO1 & DO2
  - Open drain output
  - Max switching voltage: 40 VDC
  - Max switching current: 350 mA
4. Auxiliary voltage (1) – +24V (GND must be used), 250 mA max
5. Analog output (1) – A\_OUT (GND must be used) 10 V, 10 mA max
6. Analog input (1) – A\_IN (GND must be used)
7. EIA-485 interface (1) – 485\_P & 495\_N (Modbus RTU or BACnet MS/TP)

*Note: Use wirenut to connect shield wires. Do not tie to GND.*

8. EIA-485 termination switch. (Default is Off)
9. RJ45 (ethernet) for I-con (motor control software) connection
10. Optional BACnet module
11. USB

### Analog control wire guidelines

To control the unit using Analog control please utilize the wiring guidelines on the CIO board (Figure 1).

**⚠ Caution:** DIN1-DIN4 are limited to 24VDC input. All is rated 0-10V @ 100mA max. Exceeding these voltages will permanently damage the communication board. Do not insert external wiring larger than 16 AWG (0.05" or 1.3mm) into control terminals.

### Modbus RTU or BACnet MS/TP wiring guidelines

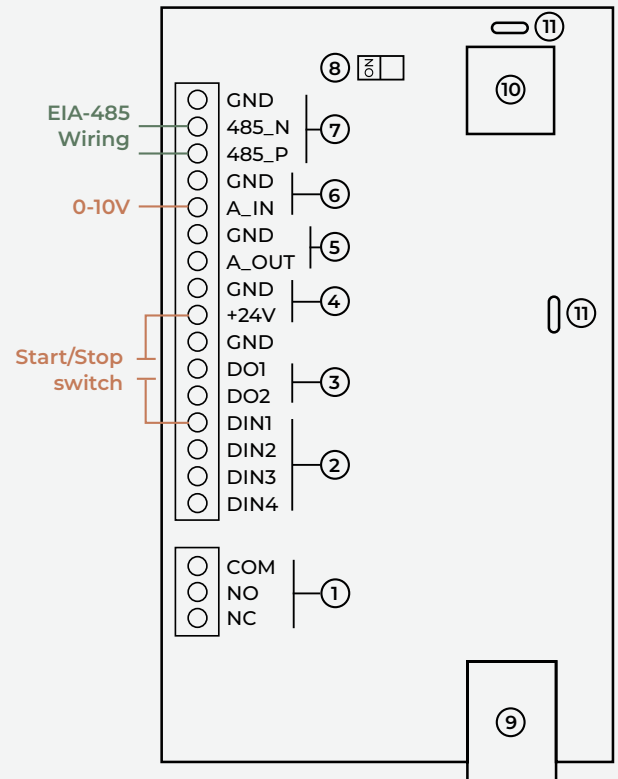
To control the motor with Modbus RTU or BACnet MS/TP please utilize the wiring guidelines to connect to the Communication I/O (Figure 1).

- The last unit on a EIA-485 daisy-chain configuration should have the EIA-485 termination DIP switch "ON".
- All other units must have the DIP switch in the "OFF" position.
- Modbus RTU and BACnet operation requires changes to the motor configuration parameters. (slave addresses, device instance)
- See the [IOM](#) for further instructions.

### AC input power

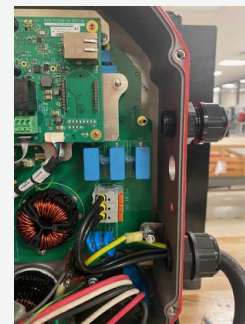
- Remove the VFD cover for access.
- 460V, 3-Phase, 60Hz power shall be provided to unit utilizing the connection points on the AC main input (Figure 2).

Figure 1: CIO board



- Analog control
- Modbus RTU or BACnet MS/TP

Figure 2: AC main input



### Reconfiguring motor

To reconfigure your Aircore EC+ motor from its default configuration, consult the [IOM Manual](#) and [I-con](#)



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