

COMMERCIAL TRAINING TOOLBOX TIPS

MODBUS COMMUNICATION GUIDE



Applicable Units

The MODBUS cables covered in this guide are intended for use with the rooftop units listed below.

Important: For rooftop units not specifically listed, follow the same troubleshooting steps outlined in this guide. Depending on the unit configuration, there may be fewer wiring harnesses and/or control boards (e.g., DSI boards) present than those illustrated.

- | | | |
|--------------|--------------|--------------|
| • LCM156-300 | • LCT156-300 | • LGT156-300 |
| • LGM156-300 | • LCX180-300 | • LHT156-300 |
| • LHX180-240 | • LDT156-300 | • LGX180-300 |
| • SGH036-240 | • SGC036-240 | • SDH036-240 |
| • SHH03-240 | | |

Self-Service Technical Support with No Wait Times
Click on the black logos below to download these apps



Modbus Related Alarms

Note: The alarms below may result from a VFD communication issue or motor-related faults.

This guide focuses only on Modbus communication and cable routing

- Alarm Code 129 - VFD Shutdown
- Alarm Code 186 – Motor Fault
- Alarm Code 238 – DSI 1 Modbus Fault
- Alarm Code 239 - DSI 2 Modbus Fault



Modbus Cable Routing

- Ensure that the Modbus daisy chain orientation is correct and that all plugs are securely connected at **A55** (Core/Lite Controller), **A3** (DSI), and **A96** (VFD) and **B3** (Blower Motor).
 - Daisy Chain Flow : (**A55 → A3 → A12 → A96 or B3**)

107175-01

FROM:

A55 (CORE CONTROLLER)
J415/P415 JACK PLUG

TO:

A3 (DSI IGNITION
CONTROLLER)
J411/P411 JACK PLUG

106597-05

FROM:

A3 (DSI IGNITION
CONTROLLER) J412/P412 JACK
PLUG

TO:

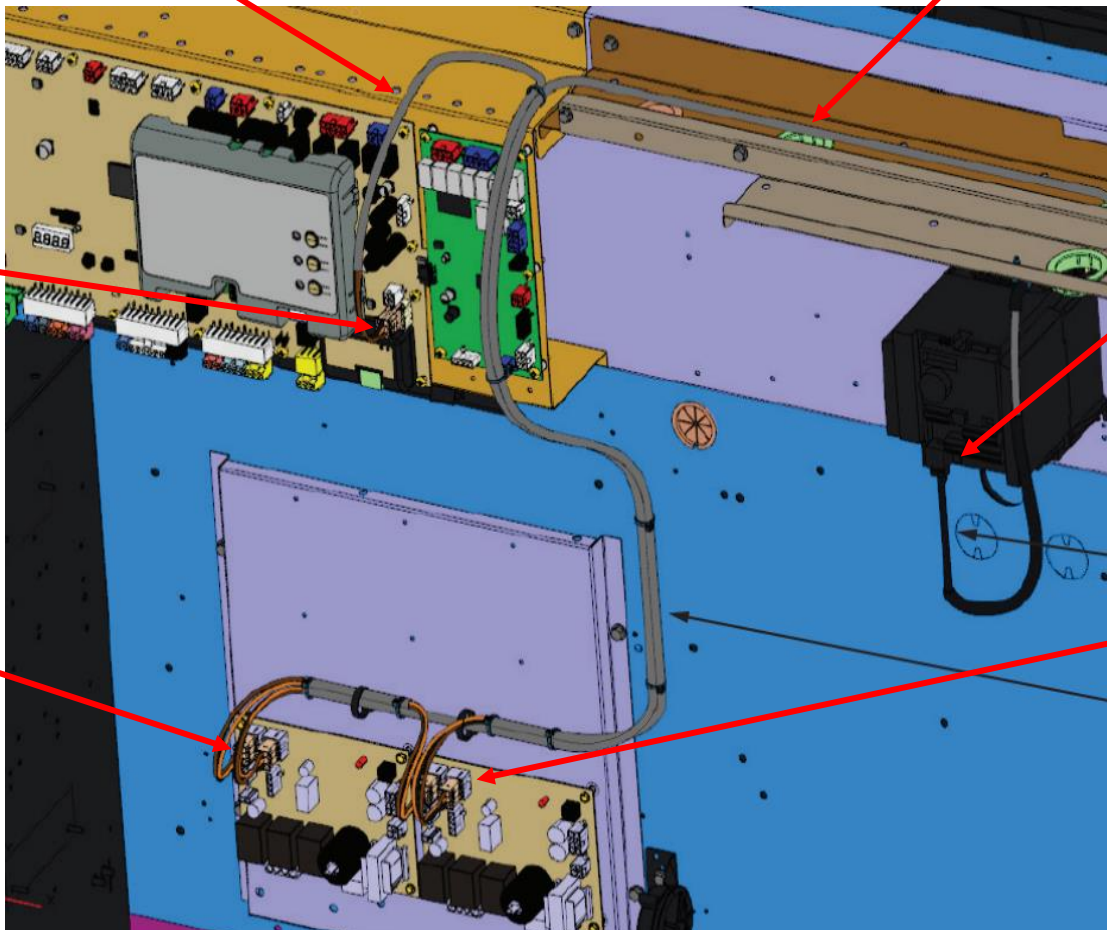
A96 BLOWER MODBUS PLUG

J413
A55

RJ45
VFD

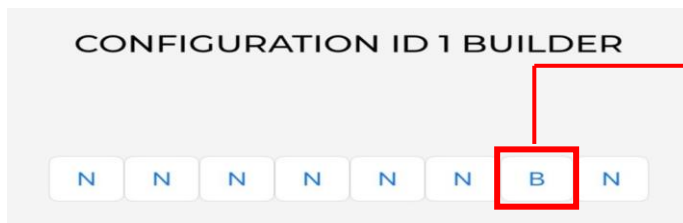
J411 /412
A3

J411 /412
A12



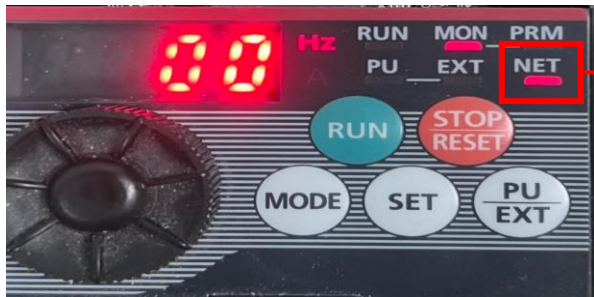
If any Modbus Related Alarms are Generated

1. Ensure that no other communication alarms are present on the Core/Lite Controller
2. Ensure Configuration ID in the CORE app is correct



B = Mitsubishi VFD
D = Delta VFD

3. Ensure VFD is configured correctly.

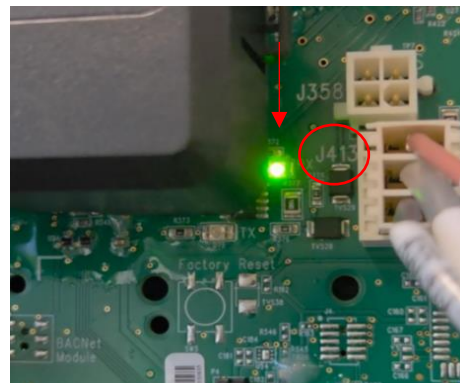
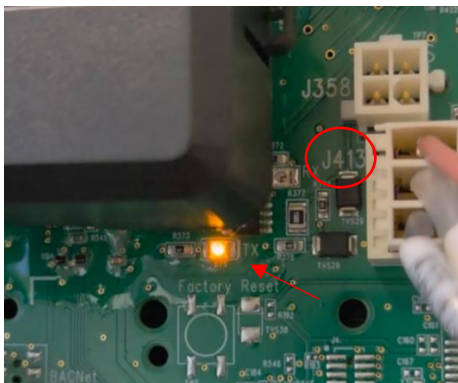


NET should be illuminated

4. Ensure that there are no alarms present on the VFD
5. If all the above checks are satisfactory, turn off the power to the unit for a minimum of one minute or until the VFD has completely shut down. Once the power is restored, wait for a complete boot process.

If Alarms are still present

1. Disconnect the Modbus harness plug (**P413**) at A55, plugs (**P411** and **P412**) at A3, plug (**P415**) at the adapter, and the (**RJ45**) connector at the VFD. Inspect the wiring and confirm that all connections are secure.
2. Check to see if the **TX (Amber)** and **RX (Green)** LED lights are flashing located to the left of J413 on Core and Core Lite boards.
 - **TX** and **RX** LEDs should flash consecutively
3. If **TX** and **RX** LEDs are not flashing, there is a connection problem, refer to step 1
4. If **TX** and **RX** LEDs are on steadily, there is a connection problem, refer to step 1



5. Should the issue persist and additional assistance be required, please do not hesitate to contact
- **Lennox Technical Support 800-453-6669.**