Leo VFD Standard & Wireless Hoists
Troubleshooting Guide

The Leo VFD Standard & Wireless Hoists have been manufactured with two different styles of PLCs. Review the pictures below to determine which section (A or B) of this troubleshooting guide will be used to repair your system.

Direct Logic 05 (DL-05)
Section A

Click (C0-00AR-D)
Section B

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Section A – Leo VFD Standard & Wireless Hoist with Direct Logic 05 (DL-05) PLC

A:1 Does the hoist do anything?

YES – A:2
NO – A:40

A:2 Is the LEO VFD System Standard (Wired) or Wireless?

Standard – A:3
Wireless – A:17

A:3 What does the hoist do?

Goes down not up	– A:4
Goes up not down	– A:7
Goes down but only slow speed up	– A:9
Goes up but only low speed down	– A:11
Goes down but only fast speed up	– A:13
Goes up but only fast speed down	– A:15
Runs but will not lift a load	– A:37
Runs but will not hold a load	– A:39

A:4 Open the enclosure box and locate the PLC and the input/output lights is the **"X5"** input light lit?

YES – A:5
NO – Check the Up Limit Switch so that the circuit is closed

A:5 While pressing the **"UP"** pushbutton on the control pendant, does the inputs **"X1"** and/or **"X3"** light up on the PLC?

YES –A:6
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

A:6 While pressing the "**UP"** pushbutton does the output **"Y0"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

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A:7 Open enclosure box and locate the PLC and the input/output lights, while pressing the **"DOWN"** pushbutton on the control pendant, does the **"X2"** and/or **"X4"** input lights light up on the PLC?

YES – A:8
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

A:8 While pressing the "**DOWN"** pushbutton does the output **"Y1"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

A:9 While pressing the **"UP"** pushbutton on the control pendant fully to the **2nd** position, does the inputs **"X1"** light up on the PLC?

YES – A:10
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

A:10 While pressing the "**UP"** pushbutton fully to the **2nd** position, does the output **"Y3"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

A:11 While pressing the **"DOWN"** pushbutton on the control pendant fully to the **2nd** position, does the inputs **"X2"** light up on the PLC?

YES – A:12
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

A:12 While pressing the "**DOWN"** pushbutton fully to the **2nd** position, does the output **"Y3"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

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A:13 While pressing the **"UP"** pushbutton on the control pendant to the **1st** position, does the inputs **"X3"** light up on the PLC?

YES – A:14
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

A:14 While pressing the "**UP"** pushbutton to the **1st** position, does the output **"Y2"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

A:15 While pressing the **"DOWN"** pushbutton on the control pendant to the **1st** position, does the inputs **"X4"** light up on the PLC?

YES – A:16
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

A:16 While pressing the "**DOWN"** pushbutton fully to the **1st** position, does the output **"Y2"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

A:17 What does the hoist do?

Goes down not up	– A:18
Goes up not down	– A:22
Goes down but only slow speed up	– A:25
Goes up but only low speed down	– A:28
Goes down but only fast speed up	– A:31
Goes up but only fast speed down	– A:34
Runs but will not lift a load	– A:37
Runs but will not hold a load	– A:39

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A:18 Open the enclosure box and locate the PLC and the input/output lights is the **"X5"** input light lit?

YES – A:19
NO – Check the Up Limit Switch so that the circuit is closed

A:19 Engage the wireless remote, while pressing the **"UP"** pushbutton does the inputs **"X1"** and/or **"X3"** light up on the PLC?

YES – A:20
NO – Check the wiring from the **"NO"** circuit of **relay 3** of the wireless receiver to the PLC

A:20 Engage the wired control pendant, while pressing the **"UP"** pushbutton on the control pendant, does the inputs **"X1"** and/or **"X3"** light up on the PLC?

YES – A:21
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

A:21 While pressing the "**UP"** pushbutton does the output **"Y0"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

A:22 Engage the wireless remote, while pressing the **"DOWN"** pushbutton does the inputs **"X1"** and/or **"X4"** light up on the PLC?

YES – A:23
NO – Check the wiring from the **"NO"** circuit of **relay 2** of the wireless receiver to the PLC

A:23 Engage the wired control pendant, while pressing the **"DOWN"** pushbutton on the control pendant, does the inputs **"X2"** and/or **"X4"** light up on the PLC?

YES – A:24
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

A:24 While pressing the "**DOWN"** pushbutton does the output **"Y1"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

A:25 Engage the wireless remote, while pressing the bottom **"UP"** pushbutton, does the inputs **"X1"** and **"X3"** light up on the PLC?

YES – A:26
NO – Check the wiring from the **"NO"** circuit of **relay 4** of the wireless receiver to the PLC

A:26 Engage the wired control pendant, while pressing the **"UP"** pushbutton fully to the **2nd** position; does the input **"X1"** light up on the PLC?

YES – A:27
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

A:27 While pressing the "**UP"** pushbutton fully to the **2nd** position, does the output **"Y3"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

A:28 Engage the wireless remote, while pressing the bottom **"DOWN"** pushbutton, does the input **"X1"** light up on the PLC?

YES – A:29
NO – Check the wiring from the **"NO"** circuit of **relay 4** of the wireless receiver to the PLC

A:29 Engage the wired control pendant, while pressing the **"DOWN"** pushbutton fully to the **2nd** position; does the input **"X2"** light up on the PLC?

YES – A:30
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

A:30 While pressing the "**DOWN"** pushbutton fully to the **2nd** position, does the output **"Y3"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

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A:31 Engage the wireless remote, while pressing the top **"UP"** pushbutton does only the input **"X3"** light up on the PLC

YES – A:32
NO – Check the wiring from the **"NO"** circuit of **relay 3** of the wireless receiver to the PLC

A:32 Engage the wired control pendant, while pressing the **"UP"** pushbutton only to the **1st** position on the control pendant, does only the input **"X3"** light up on the PLC?

YES – A:33
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

A:33 While pressing the "**UP"** pushbutton does the output **"Y2"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

A:34 Engage the wireless remote, while pressing the top **"DOWN"** pushbutton does only the input **"X4"** light up on the PLC

YES – A:35
NO – Check the wiring from the **"NO"** circuit of **relay 2** of the wireless receiver to the PLC

A:35 Engage the wired control pendant, while pressing the **"DOWN"** pushbutton only to the **1st** position on the control pendant, does only the input **"X4"** light up on the PLC?

YES – A:36
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

A:36 While pressing the **"DOWN"** pushbutton does the output **"Y2"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position and/or bad PLC

A:37 Ensure that the Control Box is connected to the proper power (230Vac-1PH-30A for single phase configuration or 208Vac-3PH-30A for three phase configuration), taking into factor the length of the power supply cable and size of cable. Is the power correct?

YES – A:38
NO – Correct the supply power and/or the supply cable

A:38 Follow the "Portable Hoist Brake Replacement and Adjustment Procedure"

A:39 Adjust the Motor Brake Tension. Does the hoist hold the load and operate correctly?

YES – Place unit back into service
NO – A:38

A:40 Check all cable connections; that the control box is connected to motor, the cord pendant is connected to the control box, and the power cord is plugged into power. Is everything connected?

YES – A:41
NO – Repair connections

A:41 Ensure that the Control Box is connected to the proper power (230Vac-1PH-30A for single phase configuration or 208Vac-3PH-30A for three phase configuration), taking into factor the length of the power supply cable and size of cable. Is the power correct?

YES – A:42
NO – Correct the supply power and/or the supply cable

A:42 Is the VFD powered up?

YES – A:44
NO – A:43

A:43 With a multi-meter set to AC voltage, check the supply voltage at terminals **"L2/S"** and **"L3/T"** for a single phase configuration or present at terminals **"L1/R"**, **"L2/S"**, and **"L3/T"** for a three phase configuration. Is the supply power present at the VFD?

YES – Damaged drive
NO – Check the wiring and connections feeding the VFD

A:44 Is the PLC powered up?

YES – A:50
NO – A:45

A:45 With a multi-meter set to AC voltage, check the control power on the secondary side of the control transformer (TR3) at terminals **"6"** and **"10"**. Is the control power present?

YES – A:48
NO – A:46

A:46 With a multi-meter set to AC voltage, check the supply power on the primary side of the control transformer (TR3) at terminals **"1"** and **"5"**. Is supply power present?

YES – Bad transformer
NO – A:47

A:47 With a multi-meter set to continuity (Ω), check the two(2) inline fuses on the primary side of the control transformer (TR3). Are the fuses good?

YES – Check supply power wiring and connections feeding the control transformer (TR3)
NO – Replace fuses

A:48 With a multi-meter set to continuity (Ω), check the one(1) inline fuse on the secondary side of the control transformer (TR3). Is the fuse good?

YES – A:49
NO – Replace fuse

A:49 With a multi-meter set to AC voltage, check the control voltage at terminals **"L"** and **"N"** on the PLC. Is the control voltage present?

YES – Check the plug of the PLC and/or bad PLC
NO – Check the wiring from the control transformer (TR3) to the PLC

A:50 Locate the PLC input/output lights is the **"X0"** light lit?

YES – A:61
NO – A:51

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A:51 Is the unit a Standard (Wired) or Wireless VFD system?

STANDARD – A:52
WIRELESS – A:55

A:52 Check that the **"STOP"** button is pulled out on the control pendant. Is the **"STOP"** button pulled out?

YES – A:54
NO – A:53

A:53 Check the PLC for the **"X0"** light. Is the **"X0"** light lit?

YES – A:61
NO – A:54

A:54 Using a multi-meter set to AC voltage, check the control voltage between the PLC terminals **"L"** and **"X0"**. Is the control voltage present?

YES – Check the input plug of the PLC
NO – Check the wiring from the PLC to the control pendant **"STOP"** button

A:55 Open the yellow cover of the wireless receiver and locate terminals **"1"** and **"2"**, this is the Power Regulator Board, locate the Power LED on the Power Board. Is the LED lit?

YES – A:57
NO – A:56

A:56 With a multi-meter set to AC voltage, check the control voltage between terminals **"1"** and **"2"** on the Power Board. Is the control voltage present?

YES – Contact Beta Max Technical Support concerning the wireless receiver
NO – Check the control power wiring from the PLC to the wireless receiver

A:57 Turn **ON** and engage **ONLY** one(1) of the wireless remotes by pressing the **"ON/START"** button twice. Is the green light on the remote present?

YES – A:58
NO – Check the three(3) AAA batteries of the remote and ensure that you are within transmitting range

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A:58 Check that the **"STOP"** button is pulled out on the wired control pendant. Is the **"STOP"** button pulled out?

YES – A:60
NO – A:59

A:59 Check the PLC for the **"X0"** light. Is the **"X0"** light lit?

YES – A:61
NO – A:60

A:60 Using a multi-meter set to AC voltage, check the control voltage between the PLC terminals **"L"** and **"X0"**. Is the control voltage present?

YES – Check the input plug of the PLC
NO – Check the wiring from the PLC through the wireless receiver **relay 1** and the wired control pendant **"STOP"** button

A:61 Is the output **"Y5"** light lit?

YES – Check the plug of the PLC and/or bad PLC
NO – A:62

A:62 Press one of the directional operations of the unit did an input **"X"** and an output **"Y"** light up?

YES – Check the wiring of the PLC **"C2"** and **"C3"** terminals to the VFD **"CM"** terminal
NO – Check the PLC switch located on the top of the PLC (left side in box orientation) and ensure it is in the **"RUN"** position

Section B – Leo VFD Standard & Wireless Hoist with Click (C0-00AR-D) PLC

B:1 Does the hoist do anything?

YES – B:2
NO – B:40

B:2 Is the LEO VFD System Standard (Wired) or Wireless?

Standard – B:3
Wireless – B:17

B:3 What does the hoist do?

Goes down not up	– B:4
Goes up not down	– B:7
Goes down but only slow speed up	– B:9
Goes up but only low speed down	– B:11
Goes down but only fast speed up	– B:13
Goes up but only fast speed down	– B:15
Runs but will not lift a load	– B:37
Runs but will not hold a load	– B:39

B:4 Open the enclosure box and locate the PLC and the input/output lights is the **"X6"** input light lit?

YES – B:5
NO – Check the Up Limit Switch so that the circuit is closed

B:5 While pressing the **"UP"** pushbutton on the control pendant, does the inputs **"X2"** and/or **"X4"** light up on the PLC?

YES – B:6
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

B:6 While pressing the "**UP"** pushbutton does the output **"Y1"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

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B:7 Open enclosure box and locate the PLC and the input/output lights, while pressing the **"DOWN"** pushbutton on the control pendant, does the **"X3"** and/or **"X5"** input lights light up on the PLC?

YES – B:8
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

B:8 While pressing the "**DOWN"** pushbutton does the output **"Y2"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

B:9 While pressing the **"UP"** pushbutton on the control pendant fully to the **2nd** position, does the inputs **"X2"** light up on the PLC?

YES – B:10
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

B:10 While pressing the "**UP"** pushbutton fully to the **2nd** position, does the output **"Y4"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

B:11 While pressing the **"DOWN"** pushbutton on the control pendant fully to the **2nd** position, does the inputs **"X3"** light up on the PLC?

YES – B"12
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

B:12 While pressing the "**DOWN"** pushbutton fully to the **2nd** position, does the output **"Y4"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

B:13 While pressing the **"UP"** pushbutton on the control pendant to the **1st** position, does the inputs **"X4"** light up on the PLC?

YES – B:14
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

B:14 While pressing the "**UP"** pushbutton to the **1st** position, does the output **"Y3"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

B:15 While pressing the **"DOWN"** pushbutton on the control pendant to the **1st** position, does the inputs **"X5"** light up on the PLC?

YES – B:16
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

B:16 While pressing the "**DOWN"** pushbutton fully to the **1st** position, does the output **"Y3"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

B:17 What does the hoist do?

Goes down not up	– B:18
Goes up not down	– B:22
Goes down but only slow speed up	– B:25
Goes up but only low speed down	– B:28
Goes down but only fast speed up	– B:31
Goes up but only fast speed down	– B:34
Runs but will not lift a load	– B:37
Runs but will not hold a load	– B:39

B:18 Open the enclosure box and locate the PLC and the input/output lights is the **"X6"** input light lit?

YES – B:19
NO – Check the Up Limit Switch so that the circuit is closed

B:19 Engage the wireless remote, while pressing the **"UP"** pushbutton does the inputs **"X2"** and/or **"X4"** light up on the PLC?

YES – B:20
NO – Check the wiring from the **"NO"** circuit of **relay 3** of the wireless receiver to the PLC

B:20 Engage the wired control pendant, while pressing the **"UP"** pushbutton on the control pendant, does the inputs **"X2"** and/or **"X4"** light up on the PLC?

YES – B:21
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

B:21 While pressing the "**UP"** pushbutton does the output **"Y1"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

B:22 Engage the wireless remote, while pressing the **"DOWN"** pushbutton does the inputs **"X2"** and/or **"X5"** light up on the PLC?

YES – B:23
NO – Check the wiring from the **"NO"** circuit of **relay 2** of the wireless receiver to the PLC

B:23 Engage the wired control pendant, while pressing the **"DOWN"** pushbutton on the control pendant, does the inputs **"X3"** and/or **"X5"** light up on the PLC?

YES – B:24
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

B:24 While pressing the "**DOWN"** pushbutton does the output **"Y2"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

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B:25 Engage the wireless remote, while pressing the bottom **"UP"** pushbutton, does the inputs **"X2"** light up on the PLC?

YES – B:26
NO – Check the wiring from the **"NO"** circuit of **relay 4** of the wireless receiver to the PLC

B:26 Engage the wired control pendant, while pressing the **"UP"** pushbutton fully to the **2nd** position; does the input **"X2"** light up on the PLC?

YES – B:27
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

B:27 While pressing the "**UP"** pushbutton fully to the **2nd** position, does the output **"Y4"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

B:28 Engage the wireless remote, while pressing the bottom **"DOWN"** pushbutton, does the input **"X2"** light up on the PLC?

YES – B:29
NO – Check the wiring from the **"NO"** circuit of **relay 4** of the wireless receiver to the PLC

B:29 Engage the wired control pendant, while pressing the **"DOWN"** pushbutton fully to the **2nd** position; does the input **"X3"** light up on the PLC?

YES – B:30
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

B:30 While pressing the "**DOWN"** pushbutton fully to the **2nd** position, does the output **"Y4"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

B:31 Engage the wireless remote, while pressing the top **"UP"** pushbutton does only the input **"X4"** light up on the PLC

YES – B:32
NO – Check the wiring from the **"NO"** circuit of **relay 3** of the wireless receiver to the PLC

B:32 Engage the wired control pendant, while pressing the **"UP"** pushbutton only to the **1st** position on the control pendant, does only the input **"X4"** light up on the PLC?

YES – B:33
NO – Check the wiring from the **"UP"** button of the control pendant to the PLC

B:33 While pressing the "**UP"** pushbutton does the output **"Y3"** and NO **"Y4"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

B:34 Engage the wireless remote, while pressing the top **"DOWN"** pushbutton does only the input **"X5"** light up on the PLC

YES – B:35
NO – Check the wiring from the **"NO"** circuit of **relay 2** of the wireless receiver to the PLC

B:35 Engage the wired control pendant, while pressing the **"DOWN"** pushbutton only to the **1st** position on the control pendant, does only the input **"X5"** light up on the PLC?

YES – B:36
NO – Check the wiring from the **"DOWN"** button of the control pendant to the PLC

B:36 While pressing the **"DOWN"** pushbutton does the output **"Y3"** and NO **"Y4"** light up on the PLC?

YES – Check connections from the PLC to the VFD
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position and/or bad PLC

B:37 Ensure that the Control Box is connected to the proper power (230Vac-1PH-30A for single phase configuration or 208Vac-3PH-30A for three phase configuration), taking into factor the length of the power supply cable and size of cable. Is the power correct?

YES – B:38
NO – Correct the supply power and/or the supply cable

B:38 Follow the "Portable Hoist Brake Replacement and Adjustment Procedure"

B:39 Adjust the Motor Brake Tension. Does the hoist hold the load and operate correctly?

YES – Place unit back into service
NO – B:38

B:40 Check all cable connections; that the control box is connected to motor, the cord pendant is connected to the control box, and the power cord is plugged into power. Is everything connected?

YES – B:41
NO – Repair connections

B:41 Ensure that the Control Box is connected to the proper power (230Vac-1PH-30A for single phase configuration or 208Vac-3PH-30A for three phase configuration), taking into factor the length of the power supply cable and size of cable. Is the power correct?

YES – B:42
NO – Correct the supply power and/or the supply cable

B:42 Is the VFD powered up?

YES – B:44
NO – B:43

B:43 With a multi-meter set to AC voltage, check the supply voltage at terminals **"L2/S"** and **"L3/T"** for a single phase configuration or present at terminals **"L1/R"**, **"L2/S"**, and **"L3/T"** for a three phase configuration. Is the supply power present at the VFD?

YES – Damaged drive
NO – Check the wiring and connections feeding the VFD

B:44 Is the PLC powered up?

YES – B:52
NO – B:45

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B:45 With a multi-meter set to AC voltage, check the control power on the secondary side of the control transformer (TR3) at terminals **"6"** and **"10"**. Is the control power present?

YES – B:48
NO – B:46

B:46 With a multi-meter set to AC voltage, check the supply power on the primary side of the control transformer (TR3) at terminals **"1"** and **"5"**. Is supply power present?

YES – Bad transformer
NO – B:47

B:47 With a multi-meter set to continuity (Ω), check the two(2) inline fuses on the primary side of the control transformer (TR3). Are the fuses good?

YES – Check supply power wiring and connections feeding the control transformer (TR3)
NO – Replace fuses

B:48 With a multi-meter set to continuity (Ω), check the one(1) inline fuse on the secondary side of the control transformer (TR3). Is the fuse good?

YES – B:49
NO – Replace fuse

B:49 With a multi-meter set to AC voltage, check the control voltage at terminals **"L"** and **"N"** on the PLC Power Supply (PS). Is the control voltage present?

YES – B:50
NO – Check the wiring from the control transformer (TR3) to the PLC Power Supply (PS)

B:50 With a multi-meter set to DC voltage, check the PLC voltage at terminals **"DC+"** and **"DC-"** on the PLC Power Supply (PS). Is the PLC voltage present?

YES – B:51
NO – Replace the PLC Power Supply (PS)

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B:51 With a multi-meter set to DC voltage, check the PLC voltage at terminals **"DC+"** and **"DC-"** on the PLC. Is the PLC voltage present?

YES – Check the connections at the plug on the PLC and/or bad PLC
NO – Check the wiring from the terminals of the PLC Power Supply (PS) to the PLC terminals

B:52 Locate the PLC input/output lights is the **"X1"** light lit?

YES – B:63
NO – B:53

B:53 Is the unit a Standard (Wired) or Wireless VFD system?

STANDARD – B:54
WIRELESS – B:57

B:54 Check that the **"STOP"** button is pulled out on the control pendant. Is the **"STOP"** button pulled out?

YES – B:56
NO – B:55

B:55 Check the PLC for the **"X1"** light. Is the **"X1"** light lit?

YES – B:63
NO – B:56

B:56 Using a multi-meter set to AC voltage, check the control voltage between the PLC Power Supply (PS) terminal **"L"** and PLC input terminal **"X1"**. Is the control voltage present?

YES – Check the signal plug of the PLC
NO – Check the wiring from the PLC to the control pendant **"STOP"** button

B:57 Open the yellow cover of the wireless receiver and locate terminals **"1"** and **"2"**, this is the Power Regulator Board, locate the Power LED on the Power Board. Is the LED lit?

YES – B:59
NO – B:58

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B:58 With a multi-meter set to AC voltage, check the control voltage between terminals **"1"** and **"2"** on the Power Board. Is the control voltage present?

YES – Contact BetaMax Technical Support concerning the wireless receiver
NO – Check the control power wiring from the PLC to the wireless receiver

B:59 Turn **ON** and engage **ONLY** one(1) of the wireless remotes by pressing the **"ON/START"** button twice. Is the green light on the remote present?

YES – B:60
NO – Check the ON/OFF switch on the back of the remote and/or the three(3) AAA batteries of the remote and ensure that you are within transmitting range

B:60 Check that the **"STOP"** button is pulled out on the wired control pendant. Is the **"STOP"** button pulled out?

YES – B:62
NO – B:61

B:61 Check the PLC for the **"X1"** light. Is the **"X1"** light lit?

YES – B:63
NO – B:62

B:62 Using a multi-meter set to AC voltage, check the control voltage between the PLC Power Supply (PS) terminal **"L"** and PLC input terminal **"X1"**. Is the control voltage present?

YES – Check the signal plug of the PLC
NO – Check the wiring from the PLC through the wireless receiver **relay 1** and the wired control pendant **"STOP"** button

B:63 Is the output **"Y6"** light lit?

YES – Check the signal plug of the PLC and/or bad PLC
NO – B:64

B:64 Press one of the directional operations of the unit did an input **"X"** and an output **"Y"** light up?

YES – Check the wiring of the PLC **"C3"** and **"C4"** terminals to the VFD **"CM"** terminal
NO – Check the PLC switch located on the front of the PLC and ensure it is in the **"RUN"** position