ClockBox Pro

Installation and Operation Manual

Version 1

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READ AND SAVE THESE INSTRUCTIONS

WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSON, OBSERVE THE FOLLOWING:

1. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed on the front cover of this manual.
2. Before servicing or cleaning unit, switch power OFF at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a lockout / tagout device based on local codes.
3. Installation work and electrical wiring must be done by a qualified person in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
5. To reduce the risk of fire or electric shock, do no use this device other than specified by the manufacturer.
6. Utilize approved wiring only.
7. This unit must be grounded.

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Clock Box PRO and Hood Interface Diagram
Non-**Plug'N'Play**

3

5

6

1
120 VAC Input (not provided)

2

4

7

10

CB1 / CB2

8

ED1

Electrical Disconnect

9
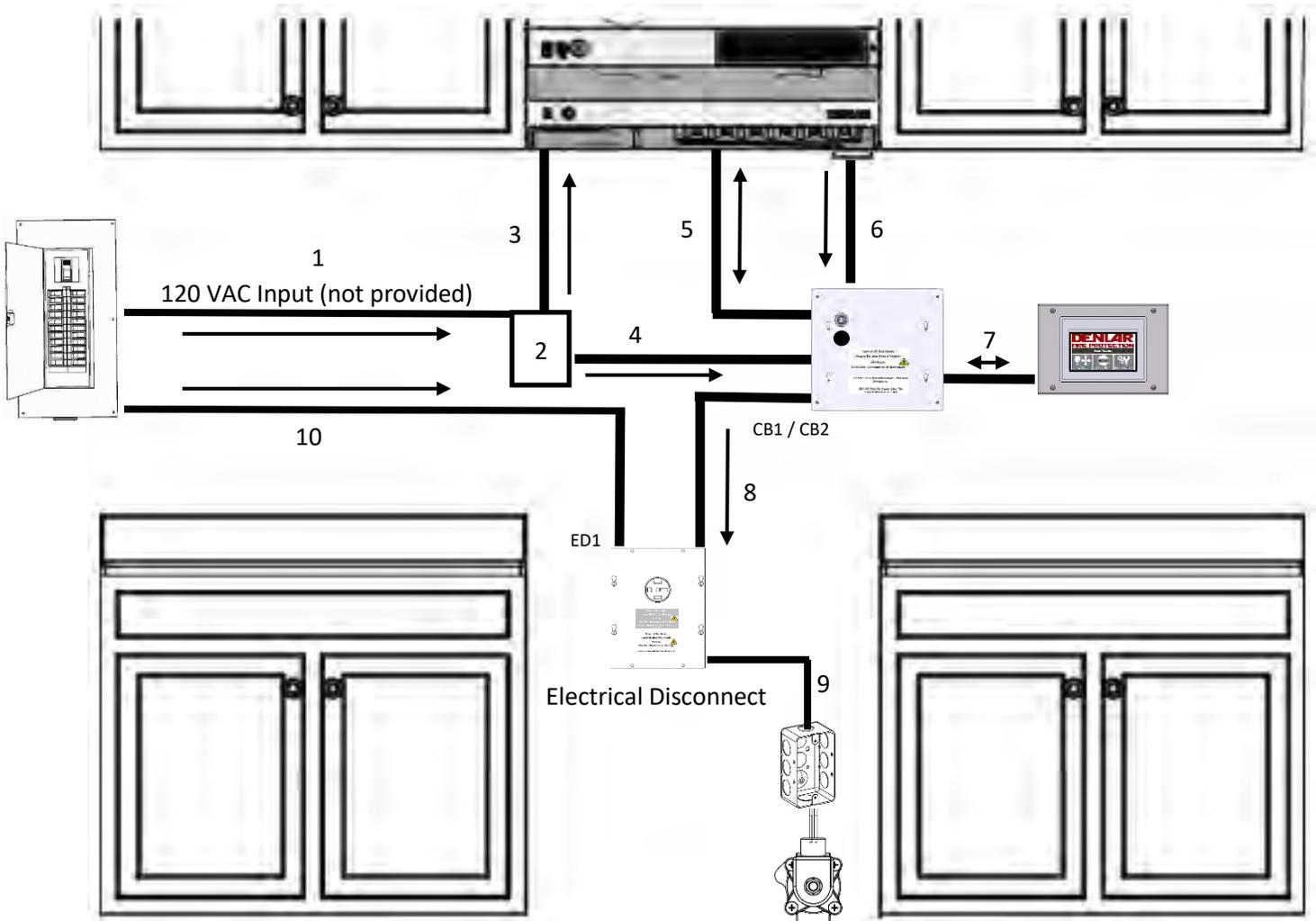
1. 120 VAC Input (not provided)
    a. 120 VAC / 15 Amp circuit (provided by installer)
2. Junction Box (not provided)
    a. Run the 120 VAC Input to the Junction Box
    b. Run the 12-2 MC (3) wire, with the red tape, from the Hood to the Junction Box
    c. Run a new cable (4) (not provided) from the Junction Box to the Clock Box PRO Control Box
    d. Wire nut the Hot leads from the three wires (1, 3, 4) together
    e. Wire nut the Neutral leads from the three wires (1, 3, 4) together
    f. Connect the grounds accordingly (1, 3, 4)
3. Metal Clad 12-2 MC wire with red tape from the Hood (provided)
4. Cable to provide 120 VAC from the Main Breaker Panel to the Clock Box PRO (not provided)

    a. Connect the Line side to position four of the eight (8) position Power Plug in the Clock Box PRO Control Box

    b.

Clock Box PRO and Hood Interface Diagram

Non-**Plug'N'Play**

    c. The Neutral wire connects to the neutral of the 14/2 MC wire (5). A jumper is also connected to the two Neutrals and inserted into position two of the eight (8) position Power Plug in the Clock Box PRO Control Box

    d. Connect the Ground to the ground bar

5. Metal Clad 14-2 MC wire with black tape from the Hood (provided)
    a. Connect the 14-2 MC wire with black tape to the eight (8) position Power Plug in the Clock Box PRO Control Box
        1. The Line side connects to position one of the eight (8) position Power Plug in the Clock Box PRO Control Box
        2. Connect the Neutral according to 4-b listed above
        3. The Ground connects to position three of the eight (8) position Power Plug in the Clock Box PRO Control Box

6. 24VDC and 120VAC Hood interface cable (provided)
7. 24 VDC Input / Output Communication cable encased in 16 mm ENT Flexible Conduit (provided)
    a. 25 Ft in length
    b. One communication (Ethernet) cable and one plenum cable
    c. Connects between the Clock Box PLC and HMI / Touch Screen

8. Output Power Disconnect Cable (provided)
    a. Connect the other end to the coil of the Power Source Disconnect (D1000-E, D1000-G, or D1000-DED)

9. Jumper cable for the D1000-DED if applicable (not provided)
10. Supply Line 120-220 VAC from the Main Breaker Panel to the D1000-E (not provided)

Clock Box PRO Control Box Power Plug

Clock Box Side   Installer Side

Clock Box Side	Installer Side	
P1-114	14-2 MC Wire	Line
P2-102		Neutral
P3-GND		Ground
P4-131	120 VAC	120 VAC from Main Breaker
P5-13-		Line
P6-102	Power Disconnect	Neutral
P7-GND		Ground
		Empty
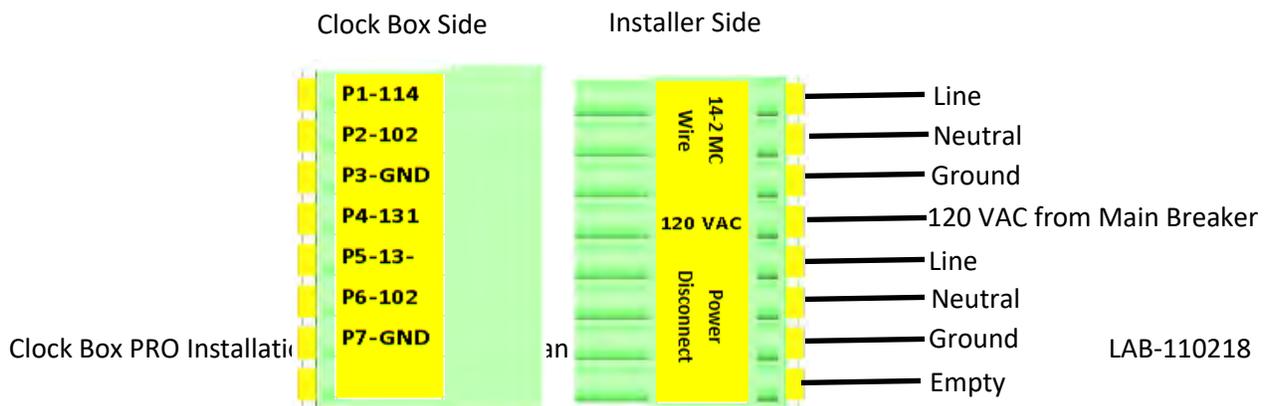
Clock Box PRO and Hood Interface Diagram
Plug'N'Play
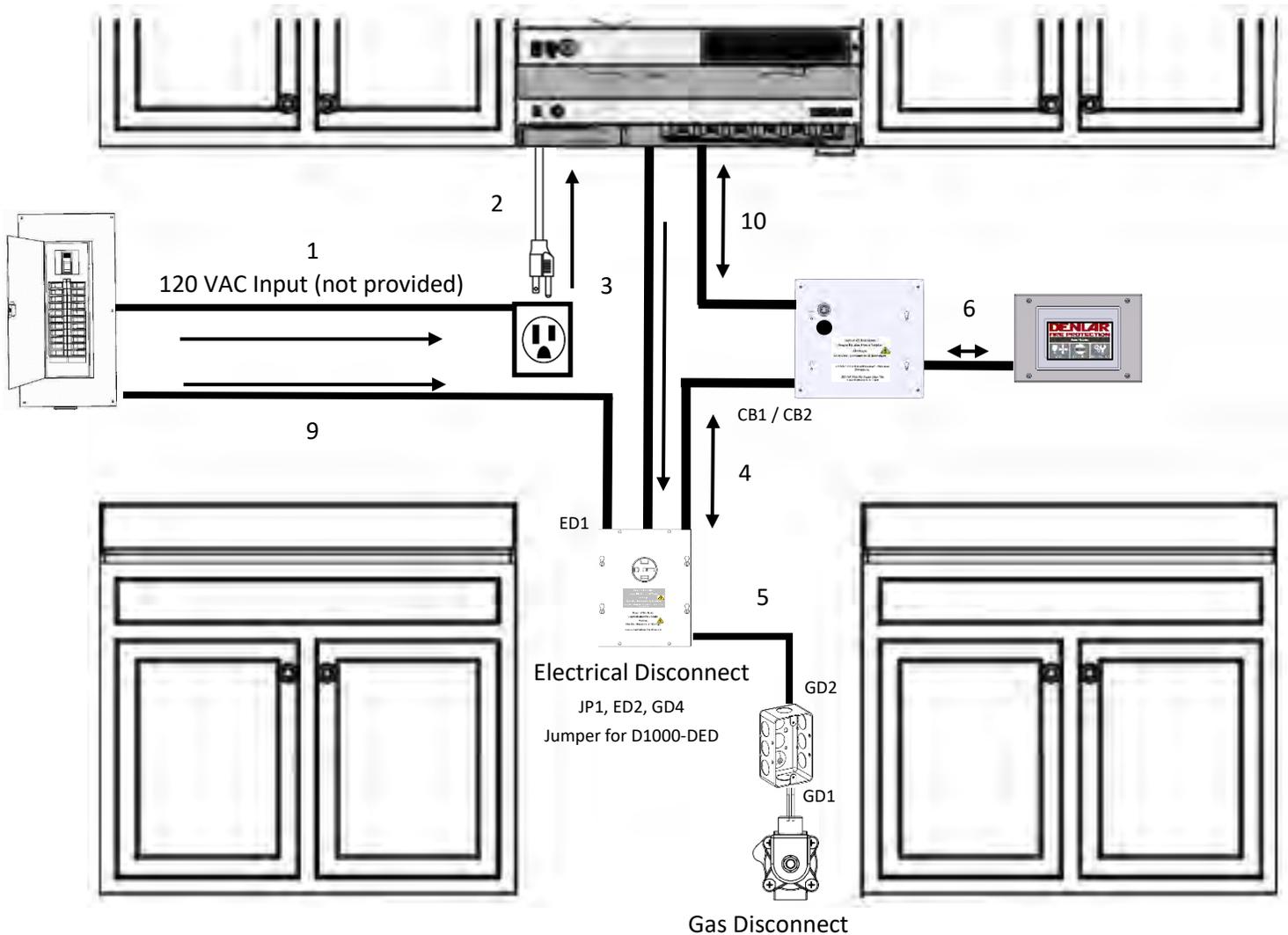
1. 120 VAC Input (not provided)
    a. 120 VAC 15 Amp circuit provided by installer
    b. Voltage supply from the Main Breaker Panel to the 5-15R Receptacle (not provided)
2. 120 VAC 15 Amp Plug Input to Hood (provided)
    a. 6 Ft in length
    b. Power Cord from the Hood and connects to the 5-15R Receptacle (not provided)
3. 120 VAC Output from Hood encased in 16 mm ENT Flexible Conduit (provided)
    a. 10 Ft in length
    b. One plenum cable
    c. Cable from the Hood to the Power Source Disconnect for the Range (Gas or Electric)
    d. One four-position connector
        i. Labeled HD1

1. Four Wires
4. 120 VAC Input/Output to/from the Clock Box encased in 16 mm ENT Flexible Conduit (provided)
   a. 10 Ft in length
   b. Two plenum cables
   c. Cable from the Clock Box to the Power Source Disconnect for the Range (Gas or Electric)
   d. Two four-position connectors
      i. Labeled CB1
         1. Four wires
      ii. Labeled CB2
         1. Three wires
   e. One eight-position connector
      i. Labeled CB3
         1. Seven wires
5. 120 VAC Input to Gas Disconnect (DED option) encased in 16 mm ENT Flexible Conduit (provided)
   a. 10 Ft in length
   b. One plenum cable
   c. Cable from the Gas Disconnect junction box to the Electrical Disconnect
   d. Two four-position connectors
      i. Labeled GD2
         1. Located at the Gas Disconnect junction box
      ii. Labeled GD3
         1. Located at the Electrical Disconnect
6. 24 VDC Input / Output Communication cable encased in 16 mm ENT Flexible Conduit (provided)
   a. 25 Ft in length
   b. One communication (Ethernet) cable and one plenum cable
   c. Connects to the Clock Box PLC and HMI / Touch Screen
7. Power Source Disconnect
   a. One four-position connector
      i. Label depends on the Power Source Disconnect option
         1. D1000-E-120/220 (Electrical)
            a. Labeled ED1
         2. D1000-G (Gas)
            a. Labeled GD1
         3. D1000-DRD
            a. Labeled ED1
         4. D1000-DED
            i. D1000-E-120/220 Labeled ED1
            ii. D1000-G Labeled GD1
            iii. Jumper Wire JP1, ED2,GD2
8. Connecting the four-position connectors from the Hood, the Clock Box, and the Power Source Disconnect.
9. 120-220 VAC supply line to Range via Electric Disconnect (not provided)
10. 24VDC and 120VAC Hood interface cable (provided)

Plug'N'Play Layout

					Plug'N'Play Connector					
					To Mating Configuration depending on model					
ID	Description	From	Positions	Wires	Hood and D1000-E	Hood and D1000-G	Hood and D1000-DED	Hood, Clock Box, and D1000-E	Hood, Clock Box, and D1000-G	Hood, Clock Box, D1000-DED
HD1	Hood Output	Hood	4	4	ED1	GD1	JP1	CB1	CB1	CB1
CB1	Clock Box Input	ClockBox	4	4	X	X	X	HD1	HD1	HD1
CB2	Clock Box Output	ClockBox	4	3	X	X	X	ED1	GD1	JP1
CB3	Clock Box Input / Clock Box Output	Electrical Disconnect or Gas Disconnect	8	7	X	X	X	CB4	CB4	CB4
CB4	Clock Box Input / Clock Box Output	ClockBox	8	7	X	X	X	CB3	CB3	CB3
JP1	Jumper Plug Input	DED Jumper	4	3	X	X	HD1	X	X	CB2
GD1	Gas Disconnect Input	Gas Disconnect Valve	4	3	X	HD1	GD2	X	CB2	GD2
GD2	Gas Disconnect Input Jumper Cable	Gas Disconnect Valve Junction Box	4	3	X	X	GD1	X	X	GD1
GD3	Gas Disconnect Output Jumper Cable	Gas Disconnect Valve Junction Box	4	3	X	X	GD4	X	X	GD4
GD4	Jumper Plug Output	DED Jumper	4	3	X	X	GD3	X	X	GD3
ED1	Electrical Disconnect Input	Electrical Disconnect Coil	4	3	HD1	X	ED2	CB2	X	ED2
ED2	Jumper Plug Output	DED Jumper	4	3	X	X	ED1	X	X	ED1

D1000, D1000-G, and Clock Box PRO
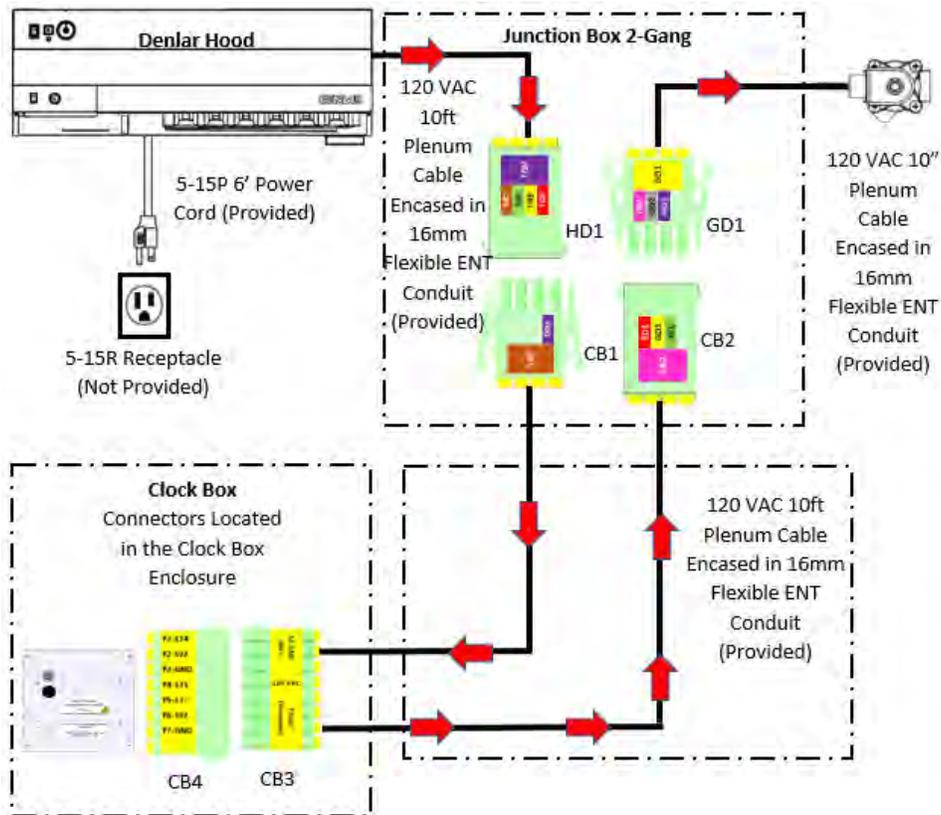
Plug'N'Play Layout

D1000, D1000-E, and Clock Box PRO
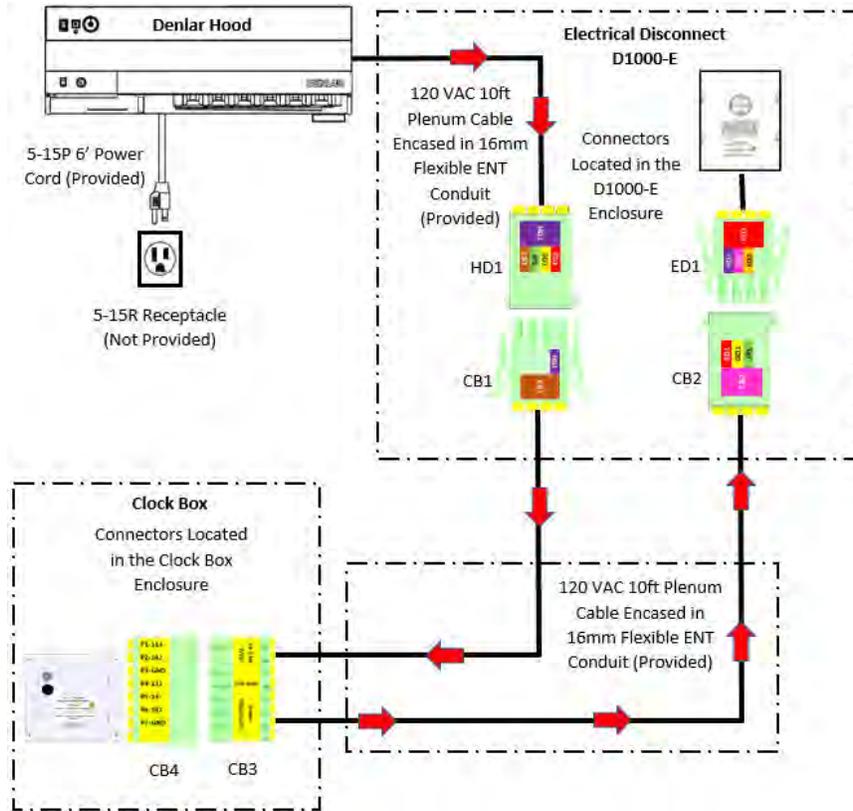
D1000, D1000-DED, and Clock Box PRO
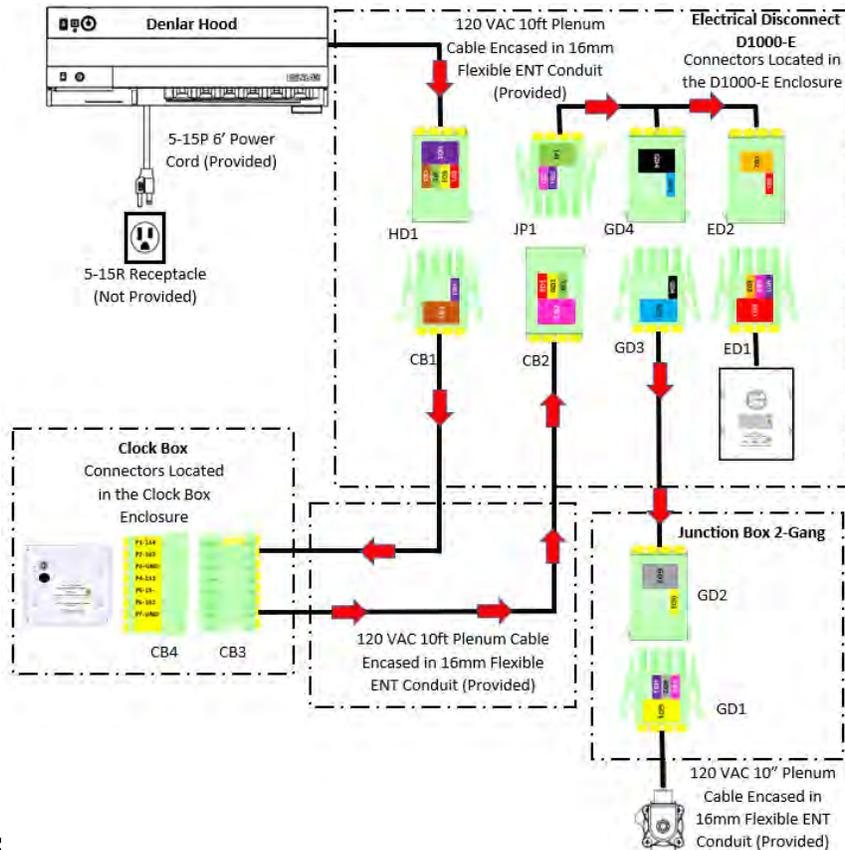
Device Flow Chart

Clock Box PRO Stand-Alone Interface Diagram

Non-**Plug'N'Play**

120 VAC Input (not provided)

1

5

2

CB1 / CB2

3

4

Electrical Disconnect
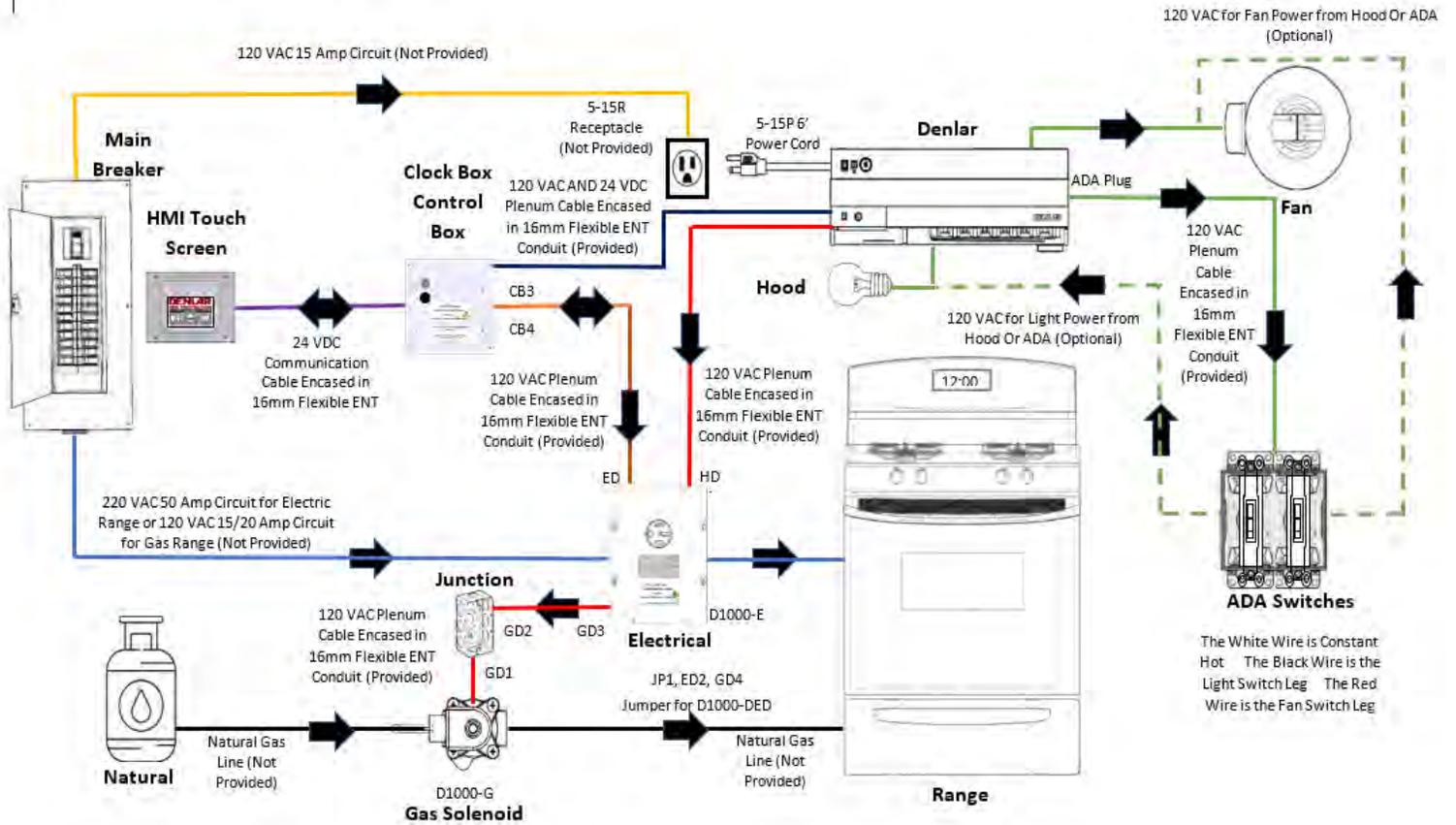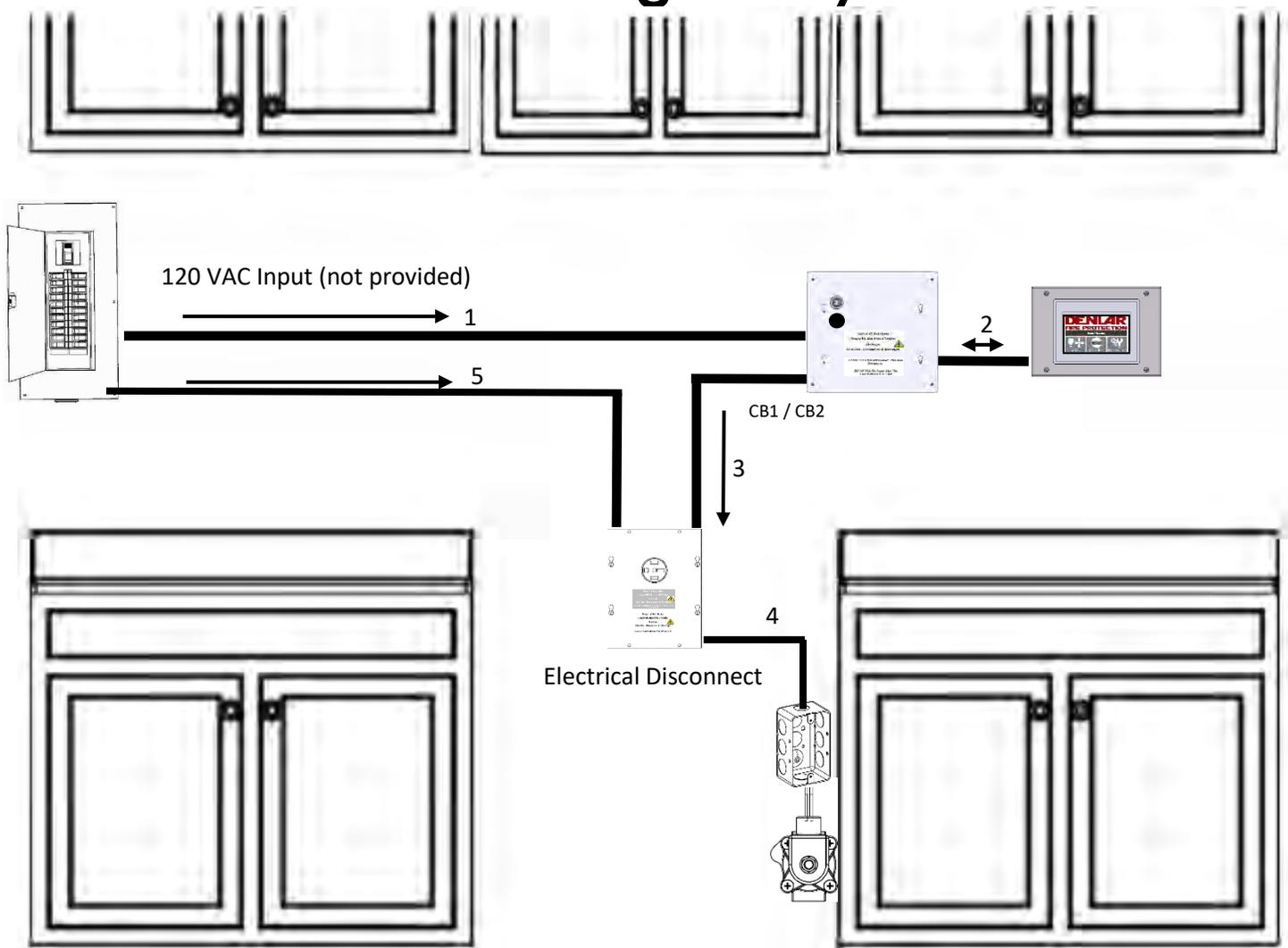
1. Cable providing 120 VAC from Main Breaker Panel to the Clock Box PRO (not provided)
    a. Connect the Line side to position four of the eight (8) position connector in the Clock Box PRO Control Box Power Plug
    b. Connect the Neutral side to position two of the eight (8) position connector in the Clock Box PRO Control Box Power Plug
    c. Connect the Ground side to position three of the eight (8) position connector in the Clock Box PRO Control Box Power Plug
2. 24 VDC Input / Output Communication cable encased in 16 mm ENT Flexible Conduit (provided)
    a. 25 Ft in length
    b. One communication (Ethernet) cable and one plenum cable
    c. Connects to the Clock Box PLC and HMI / Touch Screen

3. 120 VAC Output from the Clock Box PRO encased in 16 mm ENT Flexible Conduit (provided)

    a. Output Power Disconnect Cable (provided) 10 Ft in length
    b. One plenum cable

Clock Box PRO Stand-Alone Interface Diagram
Non-**Plug'N'Play**

    c. Runs from the Clock Box PRO to the Power Source Disconnect

4. A jumper cable for the D1000-DED if applicable (not provided)

5. The 120-220 VAC from the Main Breaker Panel to the D1000-E

Clock Box PRO Stand-Alone Interface Diagram
Plug'N'Play
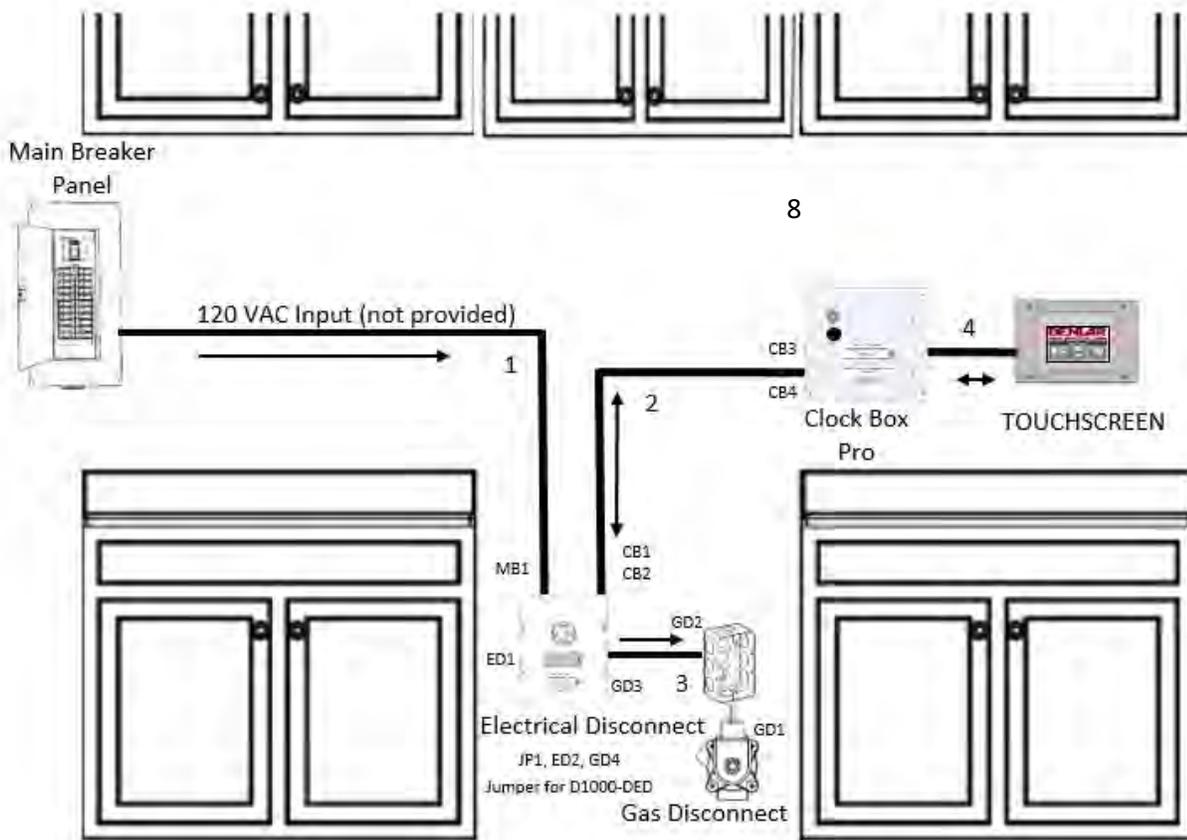
1. 120 VAC Supply for Clock Box PRO
    d. Cable (not provided) runs from the Main Breaker Panel to the Power Source Disconnect
2. 120 VAC Input/Output to/from the Clock Box PRO encased in 16 mm ENT Flexible Conduit (provided)
    a. 10 Ft in length
    b. Two plenum cables
    c. Runs from the Clock Box PRO to the Power Source Disconnect
    d. Two four-position connectors
        i. Labeled CB1
            1. Four wires
        ii. Labeled CB2
            1. Three wires
    e. One eight-position connector
        i. Labeled CB3
            1. Seven wires
3. 120 VAC Input to Gas Disconnect encased in 16 mm ENT Flexible Conduit (provided)
    a. 10 Ft in length
    b. One plenum cable

  c. Runs from the Gas Disconnect junction box to the Electrical Disconnect

  d. Two four-position connectors

    i. Labeled GD2

      1. Located at the Gas Disconnect junction box

    ii. Labeled GD3

4. 24 VDC Input / Output Communication cable encased in 16 mm ENT Flexible Conduit (provided)

  a. 25 Ft length

  b. One communication cable

  c. Connects to the Clock Box PRO PLC and TOUCHSCREEN

5. Located at the Power Source Disconnect

  a. One four-position connector

    i. Label depends on the Power Source Disconnect option

      1. D1000/DS-E-120/220

        a. Labeled ED1

      2. D1000/DS -G

        a. Labeled GD1

      3. D1000/DS -DRD

        a. Labeled ED1

      4. D1000/DS -DED

        a. D1000/DS -E-120/220

          i. Labeled ED1

        b. D1000/DS -G

          i. Labeled GD1

        c. Jumper Wire

          i. JP1

          ii. ED2

          iii. GD2

6. Connecting the four-position connectors from the Hood, the Clock Box PRO, and the Power Source Disconnect

  a. Connect the 120 VAC Supply for the Clock Box PRO from the Main Breaker Panel. See *Wiring MB1*

  b. To connect the Power Source Disconnect. See *Connector Layout*

7. Remove the Hood Interface Cable.

8. Switch the Hood to the No Hood option (See section in manual).
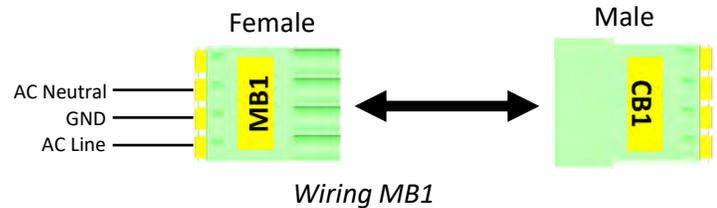
Wiring MB1

Plug'N'Play Connector					
			To Mating Configuration depending on model		
ID	**Description**	**From**	**Clock Box and D1000-E**	**Clock Box and D1000-G**	**Clock Box and D1000-DED**
MB1	Main Breaker Panel 120 VAC	Main Breaker Panel	CB1	CB1	CB1
CB1	Clock Box Input	ClockBox	MB1	MB1	MB1
CB2	Clock Box Output	ClockBox	ED1	GD1	JP1
JP1	Jumper Plug Input	DED Jumper	X	X	CB2
GD1	Gas Disconnect Input	Gas Disconnect Valve	X	CB2	GD2
GD2	Jumper Plug Output	DED Jumper	X	X	GD1
ED1	Electrical Disconnect Input	Electrical Disconnect Coil	CB2	X	ED2
ED2	Jumper Plug Output	DED Jumper	X	X	ED1

Device Flow Chart Clock Box PRO Only

HMI Touch Screen

Clock Box Control Box

5 VDC Communication Cable Encased in 16mm Flexible ENT Conduit (Provided)

CB3
CB4

120 VAC Plenum Cable Encased in 16mm Flexible ENT Conduit (Provided)

ED1   CB2

120 VAC 15 Amp Circuit (Not Provided)

MB1

220 VAC 50 Amp Circuit for Electric Range or 120 VAC 15/20 Amp Circuit for Gas Range (Not Provided)

Junction Box

GD2   GD3

120 VAC Plenum Cable Encased in 16mm Flexible ENT Conduit (Provided)

GD1

Electrical Disconnect
D1000-E
JP1, ED2, GD4
Jumper for D1000-DED

Natural Gas

Natural Gas Line (Not Provided)

Gas Solenoid
D1000-G

Natural Gas Line (Not Provided)

Range

12:00 PM

Touch Screen Mounting

Surface Mounting

1. Using a 5/64" Allen wrench (provided in bag inside Clock Box Control Box), remove the four (4x) allen screws on the front cover of the touch screen.
2. Underneath the front cover, there is a plate holding the touch screen. The plate is secured to the touch screen enclosure with two (2x) Phillips screws. Remove both screws.
    a. Unplug the power cable and ethernet cable from the touch screen.
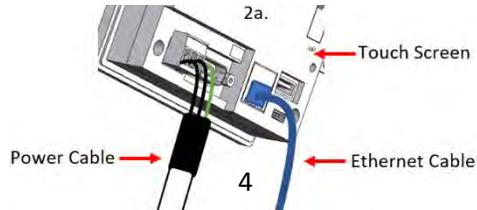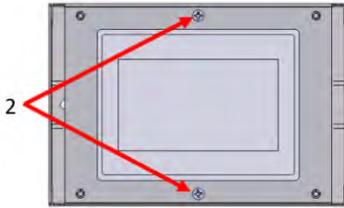
3. There are six (6x) slots that a screw can go through to mount the touch screen enclosure to the wall, secure the touch screen enclosure (Note: secure to studs or use an anchor).
4. Attach the ethernet cable and power cable to the touch screen. Secure the touch screen plate to the touch screen enclosure.
5. Attach the cover to the touch screen enclosure.
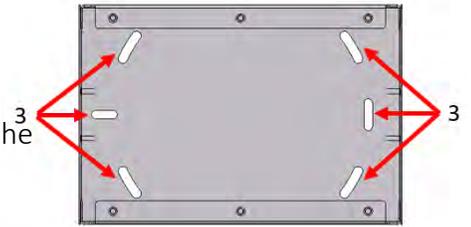
Flush Mounting

1. Using a 5/64" allen wrench (provided in bag inside Clock Box Control Box), remove the four (4x) allen screws on the front cover of the touch screen.
2. Underneath the front cover there is a plate holding the touch screen. The plate is secured to the touch screen enclosure with two (2x) Phillips screws; remove both screws.
    a. Unplug the power cable and ethernet cable from the touch screen.
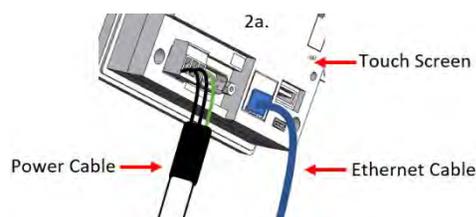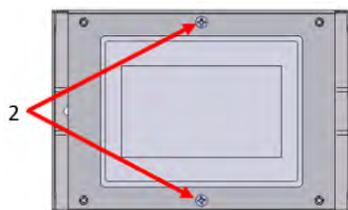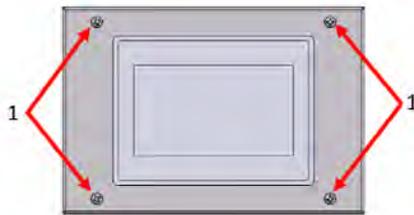
Touch Screen Mounting
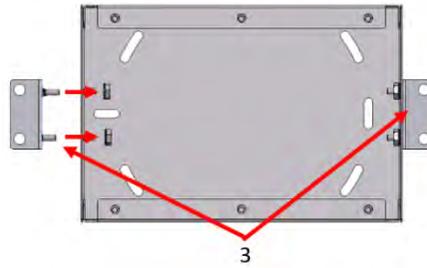
3. There are two (2x) mounting brackets (provided in bag inside Clock Box Control Box) that mount to the side of the touch screen enclosure. There are slots on the side of the touch screen enclosure that the mounting brackets secure through. Using a 11/32" wrench, secure the nuts to the brackets.
   a. The slots allow the touch screen enclosure mounting brackets to be adjusted depending on the thickness of the wall.
4. On each bracket there are two holes for screws to go through to mount to the wall, mount the touch screen enclosure to the wall.
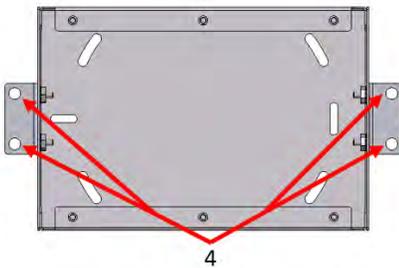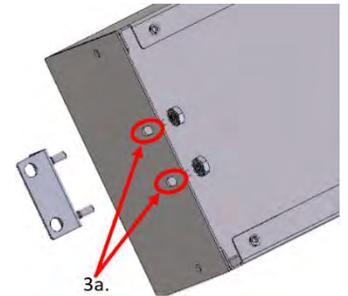
5. Attach the ethernet cable and power cable to the touch screen. Secure the touch screen plate to the touch screen enclosure.(see pg. 12)

6. For flush mount applications, use the cover for the touch screen enclosure flush mount. The cover is shipped in the foam of the main packing material sent with the Clock Box PRO. Remove the flush mount cover and install it on the touch screen enclosure.
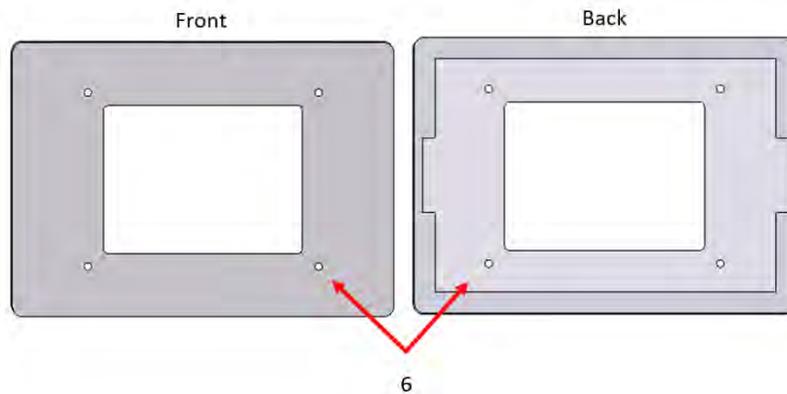
ENT Flexible Conduit Installation

1. There are three (3x) 16mm ENT flexible conduits connected to the Clock Box PRO Control Box.
   a. HMI Power/Communication Cable
      i. One (1x) Ethernet Cable
      ii. One (1x) three wire plenum Cable
   b. Hood Interface cable
      i. One (1x) twelve wire multiconductor
   c. Input / Output Cable
      i. One (1x) three wire plenum cable
         1. Input
      ii. One (1x) four wire plenum cable
         1. Output
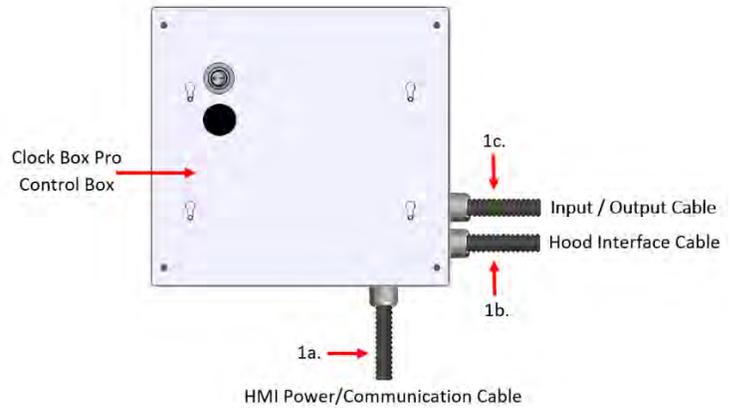
2. The HMI Power/Communication Cable is removed by loosening the gland nut in the Clock Box PRO Control Box. The Connector on the three wire plenum cable and the ethernet cable are small enough to fit through the hole in the gland nut. Reverse the process to reinstall the cable.
3. To remove the Hood Interface Cable and the Input / Output Cable, it requires removing a side cover.
   a. Loosen the two (2x) gland nuts securing the cables to the Clock Box PRO Control Box.
   b. On the outside of the Clock Box PRO Control Box, there are two (2x) Phillips screws securing the side cover to the box. Remove the two screws, take the side cover off.
   c. With the side cover removed, it opens and opening in the box that is wide enough to allow the cables connectors to be removed from the Clock Box PRO Control Box. These plugs remain attached to the cables. To install the cables, reverse the process.
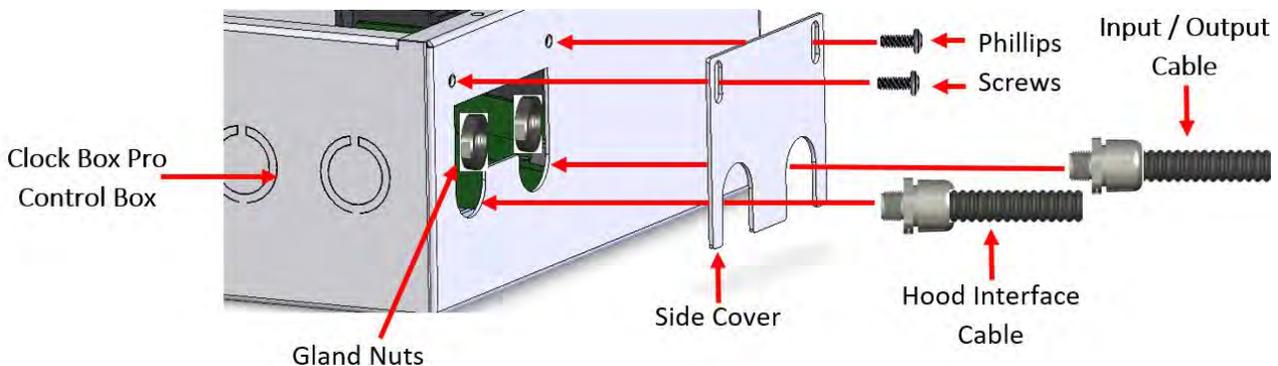
Operating the Clock Box PRO

1. From the Main Screen, press the Maintenance button. This displays the Password Screen.
2. Press the empty box below "Enter Password:". This displays the Password Entry Screen.
3. Using the Number Pad, enter the Password (1234) and press Enter. This displays the Password Screen.
4. Press OK. This displays the Clock Box Screen.
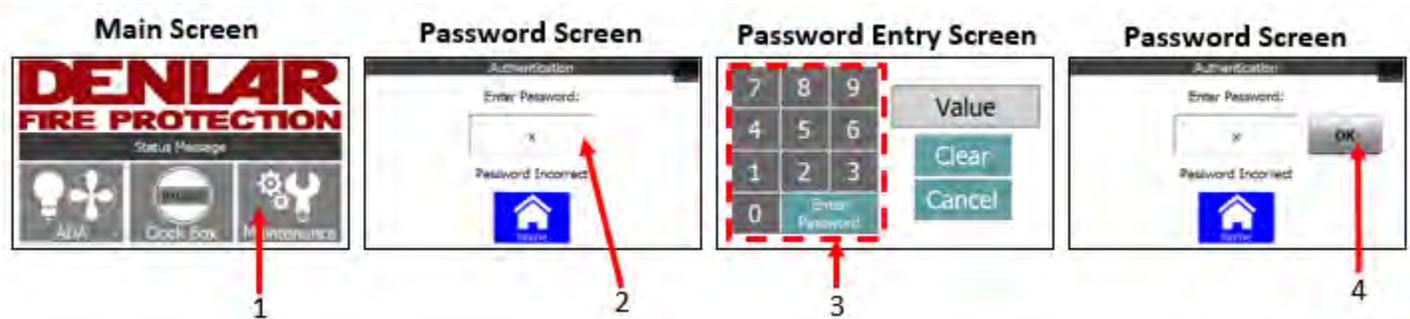
5. The Clock Box PRO Screen display's the time remaining or if the system is paused. After two minutes the screen will display the Main Screen.
6. To start the timer, press the Start Button.
   a. If the Start Button is not visible, then there is a fault. See Status Screen or Main Screen Fault Messages section of the manual for further assistants.
7. To stop the timer and reset the time, press the Stop/Reset Button.
8. Pressing the Pause Button pauses the time until the user presses pause again.
9. The Home Button brings the screen to the Main Screen.
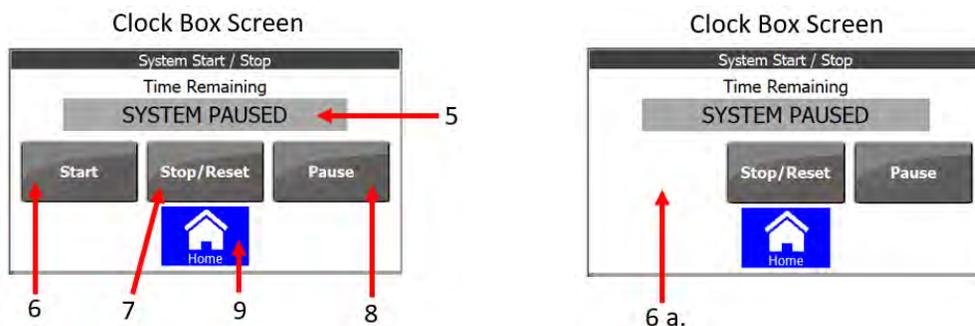
Timer Setup

1. From the Main Screen, press the Maintenance button. This displays the Password Screen.
2. Press the empty box below "Enter Password:". This displays the Password Entry Screen.
3. Using the Number Pad, enter the Password and press Enter. This displays the Password Screen.
4. Press OK. This displays the Maintenance Screen.
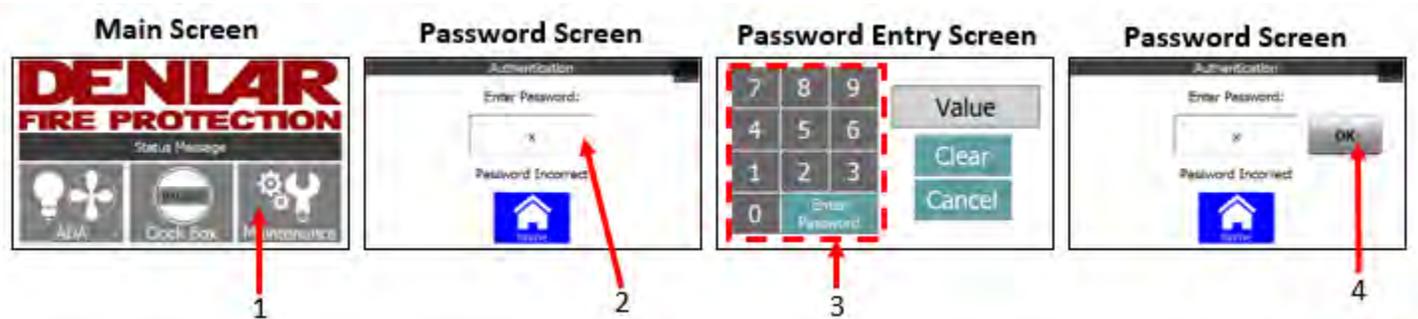
5. From the Maintenance Screen, press the Timer Setup Button. This displays the Timer Setup.
6. On the Timer Setup Screen, there is an option to select Hours, Minutes, and Seconds. Press the empty box next to the desired time setting to change. This displays the Time Input Screen.
7. On the Time Input Screen, input the desired time setting for the selected Hours, Minutes, or Seconds. Once the desired time setting is inputted press the Enter button. This Displays the Timer Setup Screen.
    a. The Hours setting is limited to 17 hours, if a higher value is inputted the Enter Button disappears.
    b. The Minutes setting is limited to 60 minutes, if a higher value is inputted, the Enter Button disappears.
    c. The Seconds setting is limited to 60 seconds, if a higher value is inputted, the Enter Button disappears.
8. Repeat this process to change any of the three time settings, Hours, Minutes, and Seconds.
9. Press Back to return to the Maintenance Screen.
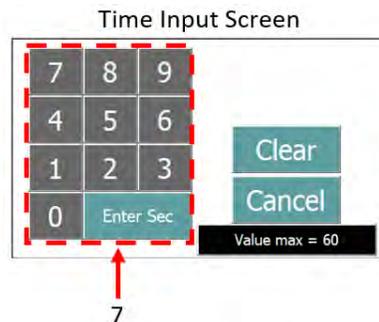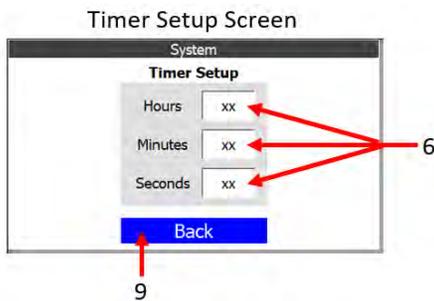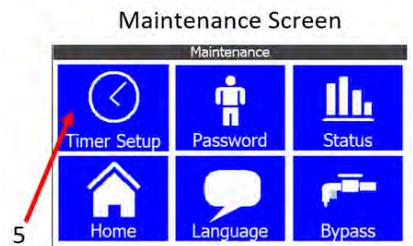
Password Setup and Reset

Change Password:

1. From the Main Screen, press the Maintenance button. This displays the Password Screen.
2. Press the empty box below "Enter Password:". This displays the Password Entry Screen.
3. Using the Number Pad, enter the Password and press Enter. This displays the Password Screen.
4. Press OK. This displays the Maintenance Screen.
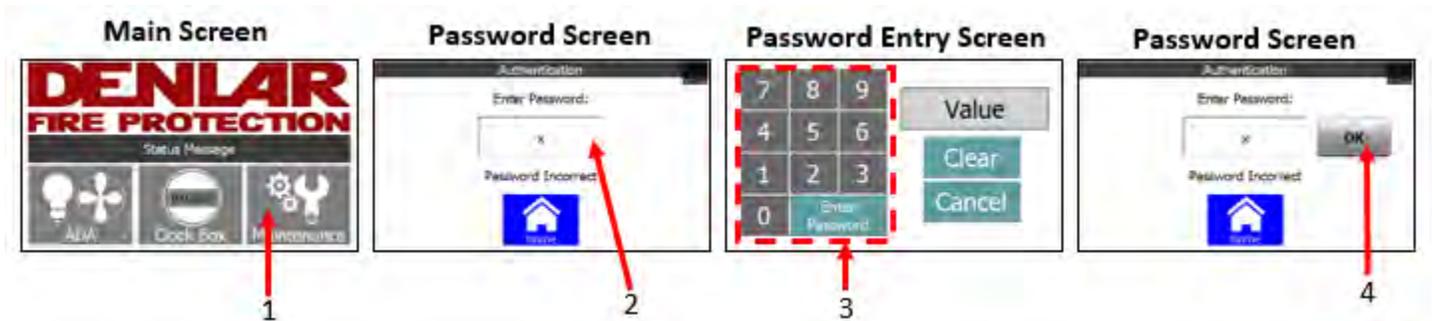
5. From the Maintenance Screen, press the Password Button. This displays the Password Setup Screen.
6. Press the empty box next to "Enter New Password:". This displays the Password Entry Screen.
7. Press the Clear Button to remove the current password from the box. Enter the password that is to be used, then press Enter Password. The screen displays the Password Setup Screen.
   a. The password can be one digit.
   b. The Clear Button clears the box.
   c. The Cancel Button cancels the operation and brings the screen to the Password Setup Screen.
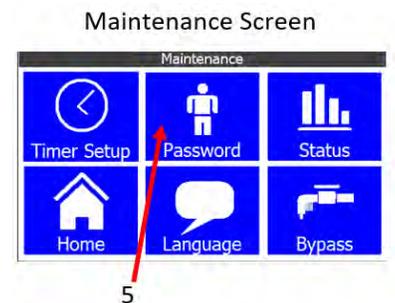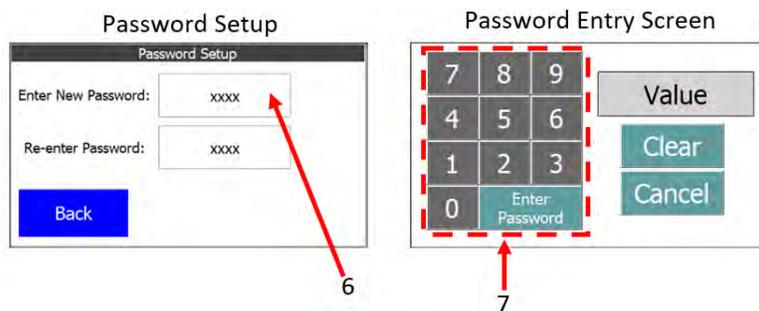
8. Press the empty next to "Re-enter Password:". This displays the Password Entry Screen.
9. Press the Clear Button to remove the current password from the box. Enter the password that is to be used, then press Enter Password. The screen displays the Password Setup Screen.
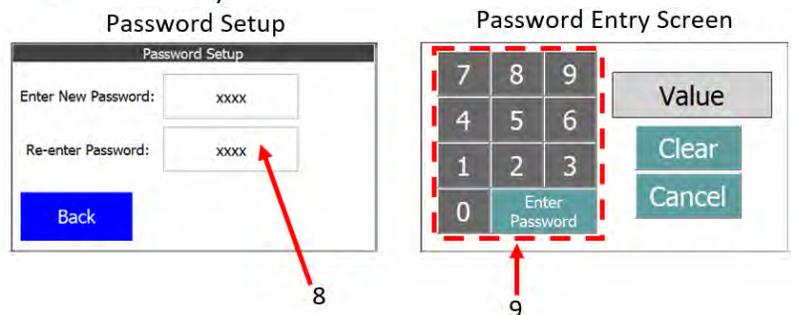
Password Setup and Reset

10. On the Password Setup Screen, there is a red X or a green check mark ✔ next to the box for "Re-enter Password:".
    a. A red X means the Re-enter password does not match. Re-enter both passwords to verify the correct password.
    b. A green check mark ✔ means the passwords match.
11. If there is a green check mark ✔, press the Change Password Button. A green check mark ✔ will appear next to the Change Password Button verifying the password is changed.
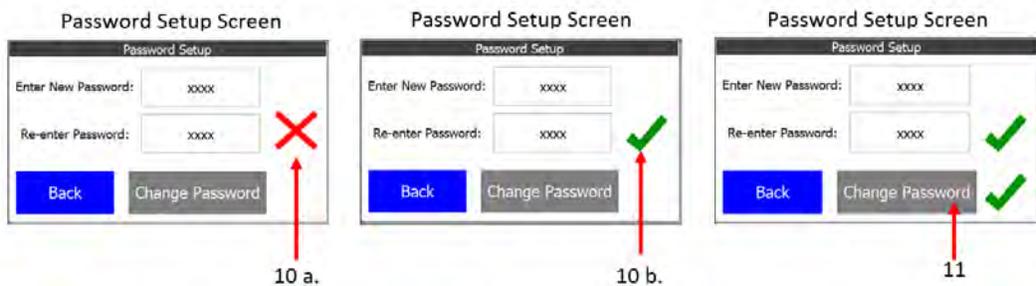
Password Reset:

1. From the Main Screen, press the Maintenance Button. This displays the Password Screen.
2. On the top right corner of the Password Screen, is a hidden button, press the button. This displays the Password Reset Screen.
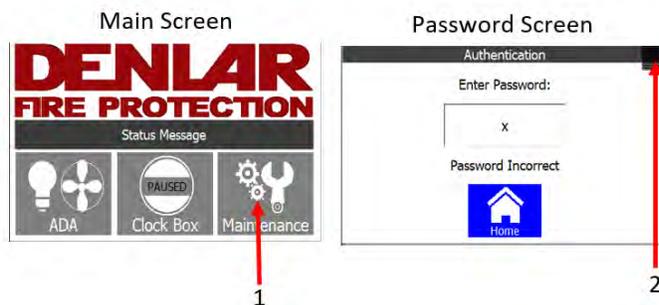
3. To reset the password, press the Yes Button. This restores the factory default password of 1234. The screen Displays the Password Screen. The No Button will cancel the operation and bring the screen back to the Password Screen.

Clock Box PRO Installation and Operati   LAB-110218

22

Handicap Accessible Controls (ADA)

The Clock Box PRO has the ADA option. This option allows a user to turn ON or OFF the fan and light. If the Screen is mounted in accordance with the American with Disabilities Act and local codes, it meets the American with Disabilities Act requirements.

Operating the ADA Controls

1. On the Main Screen, select the ADA option. This displays the Accessories Screen.
2. On the Accessories Screen, there are three buttons. There are three buttons, one with a Light Bulb on it.one with a Fan on it and with a House on it.
   a. The button with a Light Bulb powers ON and OFF the Hood light.
   Note: *The Light Bulb button on the screen does not monitor the Hood's Light Switch. If the Hood's Light Switch is ON, then to turn OFF the Hood's Light switch. Both the Hood's Light Switch and the screens button with a Light Bulb are turned OFF.*
   b. The button with a Fan powers ON and OFF the Hood fan.
   Note: *The Fan button on the screen does not monitor the Hood's fan motor. To turn OFF the Hood's fan motor, both the Hood's Fan Speed Control and the screen's button with a Fan need to be turned OFF.*
   c. The button with the House on it brings the user back to the Main Screen.
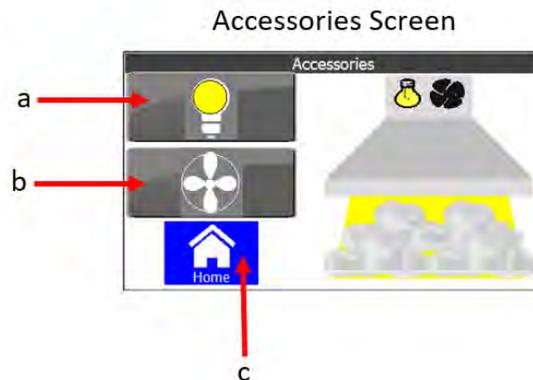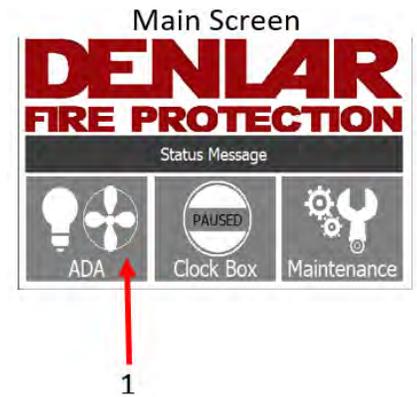
Language Setup

1. From the Main Screen, press the Maintenance button. This displays the Password Screen.
2. Press the empty box below "Enter Password:". This displays the Password Entry Screen.
3. Using the Number Pad, enter the Password and press Enter. This displays the Password Screen.
4. Press OK. This displays the Maintenance Screen.
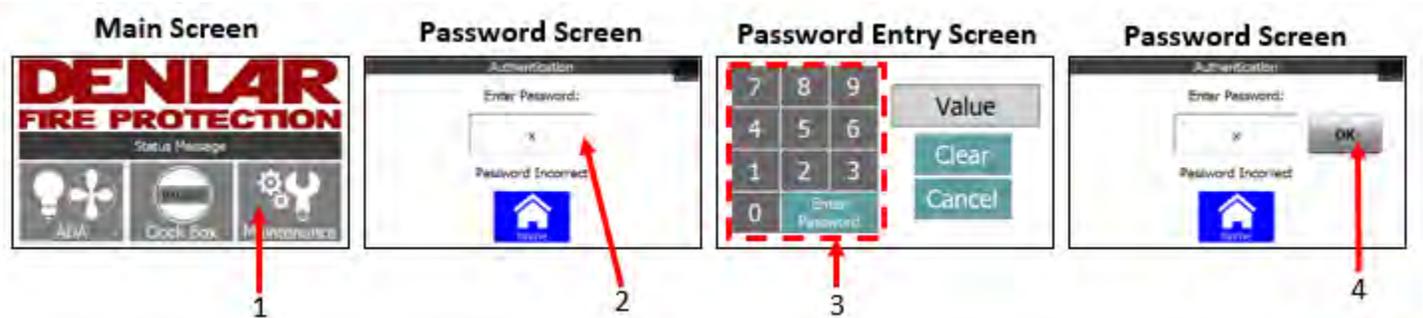
5. From the Maintenance Screen, press the Language Button. This Displays the Language Setup Screen.
6. On the Language Setup Screen, there are three different languages to choose from. Select the desired language by pressing the button.
   a. English
   b. French
   c. Spanish
7. Press the Back Button to display the Maintenance Screen.
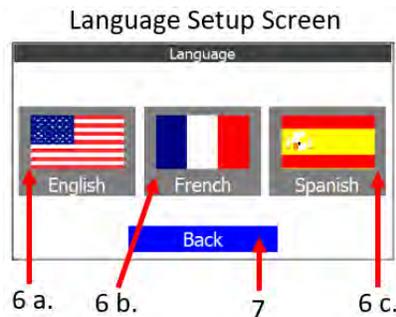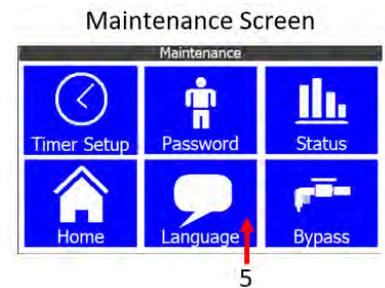
Main Screen Faults

When the Clock Box PRO is powered on, it loads the Main Screen. On the Main Screen there is a Status Message. If connected to a D1000 Hood, the status message gives the user step by step instructions on ensuring the D1000 Hood is in operating mode. If the D1000 Hood is not in operating mode, is turned OFF, or has an event, the status message will display what is happening.

Main Screen

DENLAR FIRE PROTECTION

Status Message ← **Status Message**

ADA   Clock Box (PAUSED)   Maintenance
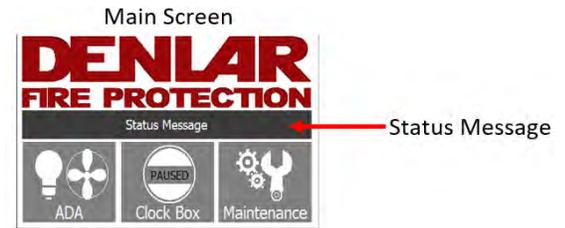
Status Messages:

1. The Hood is turned OFF. Turn Power on to the Hood.
   a. The Main Power Switch to the Hood is OFF. The Range will not power on. Turn the Switch On.
2. The Hood is in Standby mode. Press the Reset Button.
   a. The Hood is powered on but in Standby Mode. The Range will not power on. The Status LED on the Hood is a solid yellow. Press the Reset Button. The Status LED turns a solid Green.
3. The Hood is in Maintenance Mode. The Range will not Power On.
   a. The Maintenance Switch in the Hood is in Maintenance Mode. The Range will not power on. Turn the Switch to Operating Mode (See D1000 Manual) and Press the Reset Button.
4. The Tank Pressure is Below 75psi. The Range will not Power on.
   a. The Pressure in the D1000 Tank is low and cannot put out a fire. The Range will not power on. Inspect the Pressure Gauge on the top front of the Hood. If the Arrow is out of the green area by plus or minus 10%, then the D1000 Tank needs a replacement.
5. The Tank Discharge Hose is not connected properly. The Range will not Turn On.
   a. The Tank's Discharge Hose is not properly connected to the Hood. Place the Hood in the 45deg maintenance position (See D1000 Manual). Attach the Discharge Hose properly to the Hood, ensure the microswitch is engaged.
6. The Temperature at the Hood is above 190F. The Range will not Power On.
   a. The high temperature thermostat for the Hood activated due to high temperature at the Hood. The Range will not Power On. Leave the Hood's fan on for a few minutes to dissipate the heat.
7. External Monitoring System Shut Down Fault
   a. The external building monitoring system or alarm system sent a signal to shut down the Range. The Range will not Power On.
8. Start the Clock Box Timer
   a. The Hood is in Normal Operating Mode with no events. The external building monitoring system or alarm system did not send a shutdown signal. The Clock Box PRO timer can be started. The Range will not Power On.
9. The Power Disconnect is Closed. the Range is Powered On.
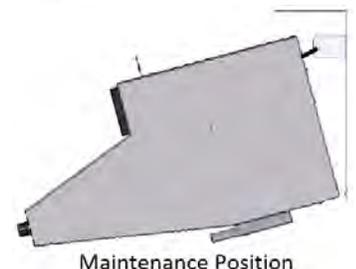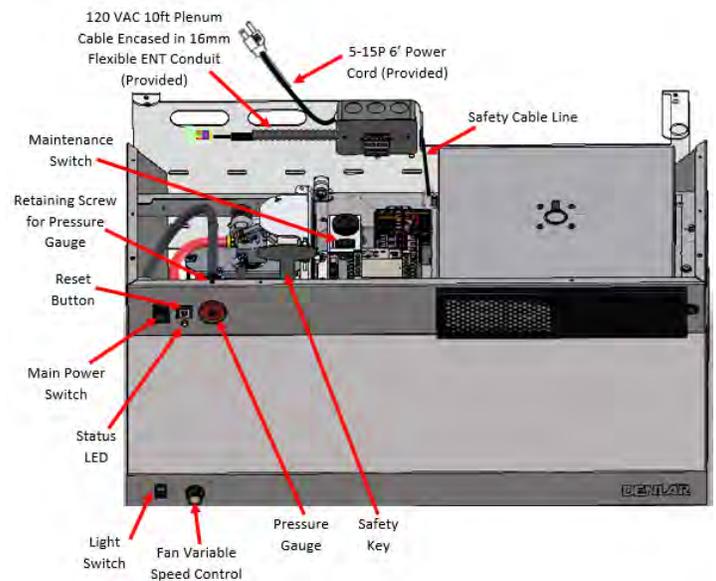
a. The Hood is in normal operating mode with no events. The external building monitoring system or alarm system did not send a shutdown signal. The Clock Box PRO timer is started and counting down. The Range is powered on.

Status Screen

The Status Screen is an annunciator for different events that take place between the Hood, the Clock Box PRO, the Device being controlled, and the building monitoring system or alarm system. The lights below each of the ten items being monitored illuminate on different events.

1. Device
    a. This illustrates if the Clock Box PRO is energizing the power source disconnect or a device that is 120VAC / 8A.
        i. If the displayed text reads "Device Off" and the light is red, the Clock Box PRO is not energizing the power source disconnect or a device that is 120VAC / 8A.
        ii. If the displayed text reads "Device On" and the light is green, the Clock Box PRO is energizing the power source disconnect or a device that is 120VAC / 8A.
2. Status LED
    a. This displays the color of the status LED on the Hood.
        i. See D1000 Manual for LED code references.
3. Reset
    a. This illuminates when the Reset Button on the Hood is pressed.
4. Maintenance Switch
    a. This illuminates when the Hood is in Maintenance Mode.
5. Hood
    a. This illuminates if the Hood is in Operating Mode.
6. RTU Normal
    a. This illuminates if a building monitoring system or alarm system sends a signal to shut the range OFF.
7. Power
    a. This illuminates when the Hood is powered ON.
8. Above 190'F
    a. This illuminates if the temperature at the Hood is above 190'F.
9. PSW Low
    a. This illuminates if the Tank pressure is below 75psi.
10. HSW Fault
    a. This illuminates if the Tank's discharge Hose is not installed properly.
11. Back
    a. This brings the screen back to the Maintenance Screen.
12. Is a hidden button
    a. This brings the screen to the Monitoring Screen.
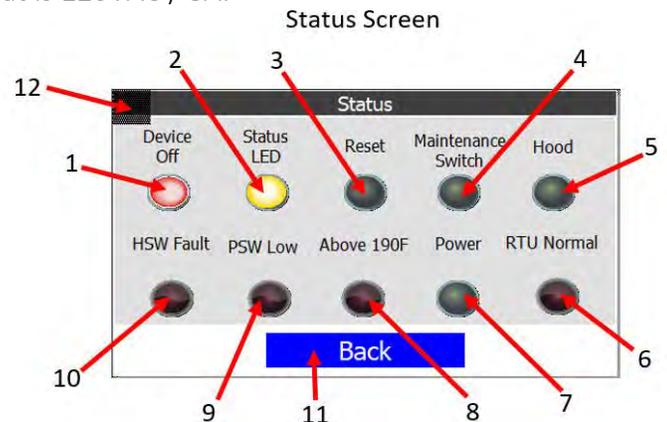
Bypass Setup

The Clock Box PRO is equipped with a Bypass feature. This feature allows the user to test the Hood without a tank installed. The Bypass is hard coded to a 30-minute time limit, this cannot be adjusted.

1. From the Main Screen, press the Maintenance button. This displays the Password Screen.
2. Press the empty box below "Enter Password:". This displays the Password Entry Screen.
3. Using the Number Pad, enter the Password and press Enter. This displays the Password Screen.
4. Press OK. This displays the Maintenance Screen.
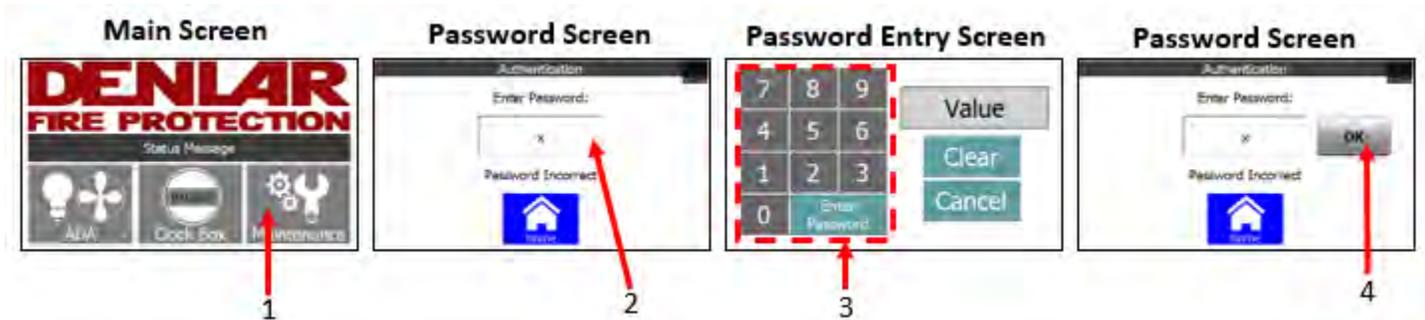
5. From the Maintenance Screen, press the Bypass Button. This displays the Bypass Screen.
6. To emulate that a tank is installed:
   a. Press the HSW Off Button. The text in the button switches to HSW On.
      i. This emulates that the tank's discharge hose as being connected.
   b. Press the PSW Off Button. The text in the button switches to PSW On.
      i. This emulates that there is pressure in the tank assembly.
   c. The Hood can be tested for functionality for 30-minutes at this point. The switches reset after the 30-minute timer expire.
7. The Fan Button will power the Fan to High speed. (See Handicap Accessible Controls section of the manual)
8. The Light Button will turn the Light ON. (See Handicap Accessible Controls section of the manual)
9. Status Message stating if the Hood is in Normal Operating Mode (See D1000 Manual).
10. Status Message stating if the Clock Box PRO is powering the power source disconnect or a device that is 120VAC / 8A.
11. The Back Button brings the screen to the Maintenance Screen.
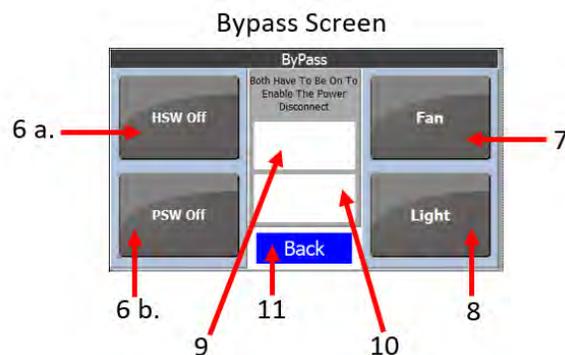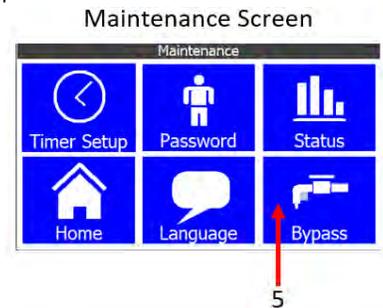
Monitoring System

The Clock Box PRO has an option to connect to a building monitoring system or alarm system. This feature allows the Clock Box PRO to send a signal to the building monitoring system or alarm system based on events chosen by the user. Also, this feature allows a building monitoring system or alarm system to send a signal to the Clock Box PRO to shut the range OFF.

Setting up the Monitoring System events

1. From the Main Screen, press the Maintenance button. This displays the Password Screen.
2. Press the empty box below "Enter Password:". This displays the Password Entry Screen.
3. Using the Number Pad, enter the Password and press Enter. This displays the Password Screen.
4. Press OK. This displays the Maintenance Screen.
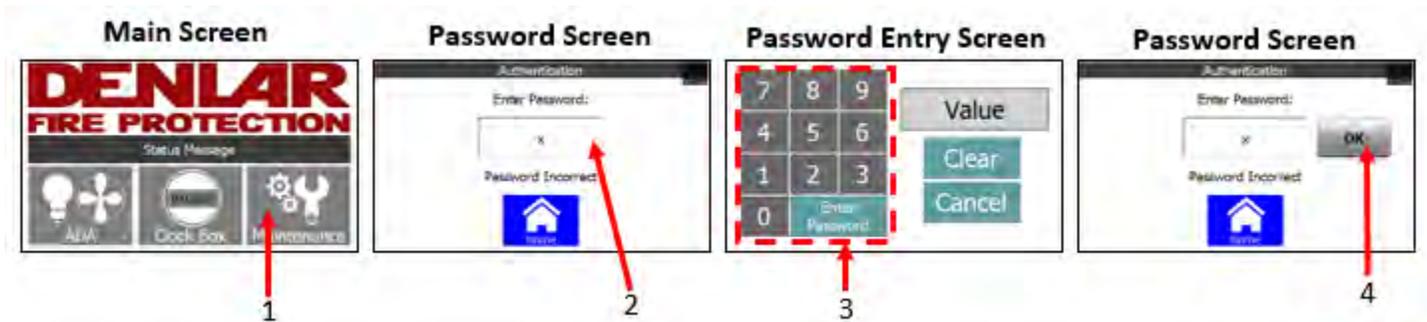
5. Press the Status button. This displays the Status Screen.
6. In the top left corner of the Status Screen, there is a hidden button, press the hidden button. This displays the Monitoring Screen.

7. On the Monitoring Screen, there are several check boxes next to each event the system monitors. To enable the Clock Box PRO to send a signal to the building monitoring system or alarm system, press the check box next to the event the user wants to monitor for.
   a. Events:
      i. The Tank's Discharge Hose is not connected.
         1. If checked, a signal is sent when the Hood's Tank Discharge Hose is not properly installed.
      ii. The Tank Pressure is Low.
         1. If checked, a signal is sent when the Hood's Tank pressure is below 75psi.

Monitoring System

      iii.   Temperature at the Hood is above 190'F.
          1.   If checked, a signal is sent when the Hood reaches 190'F.
      iv.   The Hood is powered OFF.
          1.   If checked, a signal is sent when the Hood is not powered ON.
      v.   The Hood is in Maintenance Mode.
          1.   If checked, a signal is sent when the Hood is switched from Operating Mode to Maintenance Mode.
   b.   Each of the five events above prevents the range from being powered ON.

Sending a signal to the building monitoring system or alarm system

The Clock Box PRO provides a discreet COM, NO, and NC relay circuit. To send a signal to the monitoring system, the installer can connect to the appropriate configuration required to alert the monitoring system.

In the Clock Box PRO control box, there is a six-position plug for the monitoring system. The first three wires are colored orange, white, and yellow. The orange is the COM. The white is the NO, and the yellow is the NC. The installer's plug is a push-to-connect for solid or terminated ferruled wires. The Clock Box PRO relay changes states based on the events selected on the Monitoring Screen (See above).
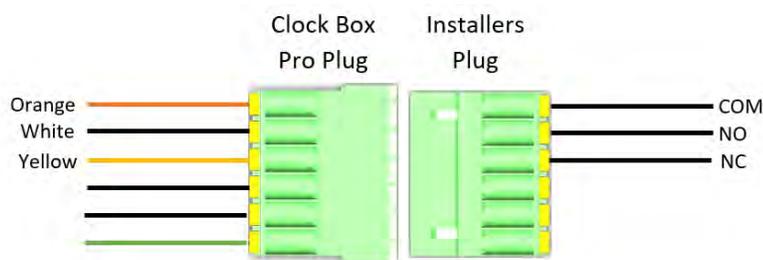
Monitoring System

Receiving a signal from the building monitoring system or alarm system

The Clock Box PRO provides a connection that allows a building monitoring system or alarm system to send a signal to the Clock Box PRO to power down the range.

In the Clock Box PRO control box, there is a six-position plug for the monitoring system. The last three wires are black, white, and green/yellow. The black and white wires control a relay coil that is powered by the signal sent from the building monitoring system or alarm system. The optional relay voltages (sent with the Clock Box PRO) are 120 VAC, 24 VDC, and 12 VDC. Define the needed voltage and install the relay accordingly (See below). If an additional voltage is required, please contact Denlar Service.

To connect the wires, the black is the Hot or positive, the white is the neutral, and the green/yellow is for ground. The installer's connector is a push-to-connect for solid or terminated ferruled wires.

To select the relay, there is a bag with three (3x) different relays in it. The coil voltage for the relays are marked on the top of the relay. Identify the correct relay required.
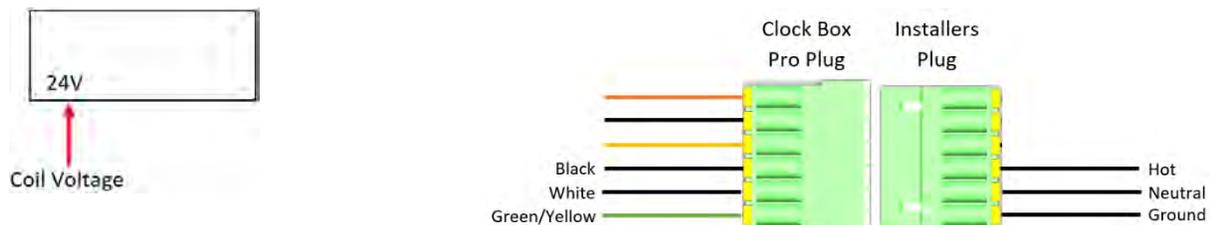
Insert the relay into the K4 relay socket. To do this, press the Relay Retaining Clip down. Insert the required K4 Relay into the K4 Relay Socket. Press the top of the Relay down to engage the K4 Relay.
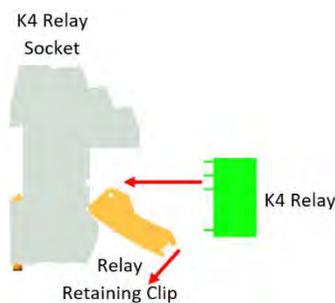
No Hood Connected

The Clock Box PRO has an option to be connected to a power source disconnect or a device limited to 120VAC / 8A. No additional wiring is needed for to accomplish this. The Clock Box PRO comes equipped with a selector switch to do this. Using this switch, allows the 120 VAC powering the Clock Box PRO to energize the power source disconnect or a device that is 120VAC / 8A.
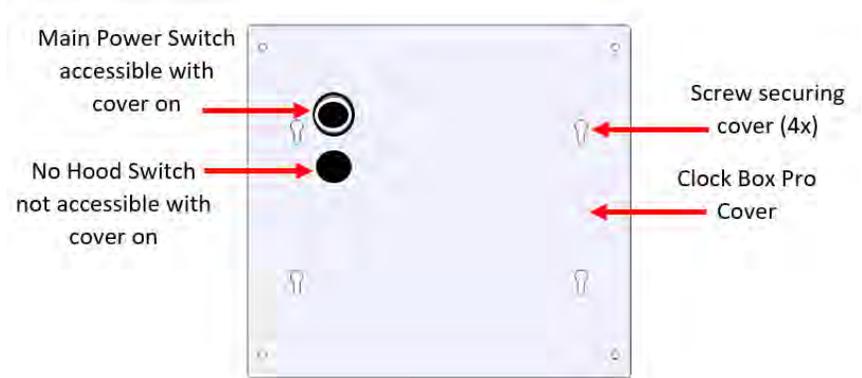
Note: The Clock Box PRO comes with a 1A fuse, if the device is over 1A then the F5 fuse has to be replaced with the applicable fuse (type 5mm x 20mm cartridge).

1. To enable the No Hood function, remove the four screws securing the Clock Box PRO Cover.
2. The No Hood Switch is exposed. Flip the switch to enable the No Hood option.
3. Certain options on the screen will not be accessible due to the fact that a no Hood option was selected.
   a. The Main Screen ADA button is removed.
   b. On the Maintenance Screen, the Status and Bypass buttons are removed.
4. The option is disabled by reversing the process.
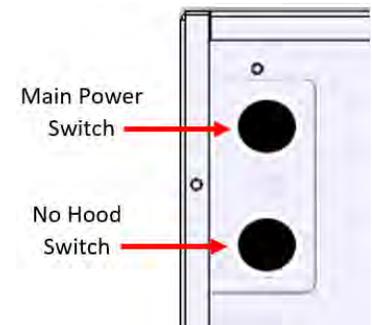
Main Screen	Maintenance Screen
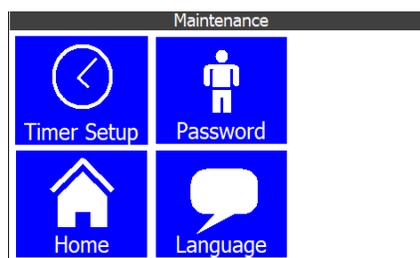
Troubleshooting Quick Guide

Device	Fault	Action
Touch Screen	Power Does Not Come ON	Check to see if the power switch is ON
		Check that the main breaker is not tripped
		Check the F5 fuse, replace if blown
		Check the power plug connection at the touch screen
		Check the power plug connection at the Clock Box Pro control Box
	Communication Error	Check the ethernet connection at the touch screen
		Check the ethernet connection at the Clock Box Pro control Box
		Replace the ethernet cable
	Start Button missing from Clock Box Screen	The Hood is not in Normal Operating Mode. Check status Message on Main Screen. Refer to Status Screen Section of the manual.
		There is an event with the Hood. Check status Message on Main Screen. Refer to Status Screen Section of the manual.
	Password does not work	Reset the Password. Refer to Password Setup Section of the manual
Power Source Disconnect	Power Source Disconnect is not turning ON when the timer is started	Refer to D1000 Manual
		Refer to the Device Flow Chart to ensure Proper connections
Status Messages	The Hood is turned OFF. Turn Power ON to the Hood.	The Main Power Switch to the Hood is OFF. The Range will not power ON. Turn the Switch ON.
	The Hood is in Standby Mode. Press the Reset Button.	The Hood is in Standby Mode. Press the Reset Button.
	The Hood is in Maintenance Mode. The Range will not Power ON.	The Maintenance Switch in the Hood is in Maintenance Mode. The Range will not power ON. Turn the Switch to Operating Mode (see D1000 Manual) and Press the Reset Button.
	The Tank Pressure is Below 75psi. The Range will not Power ON.	The Pressure in the D1000 Tank is low and cannot put out a fire. The Range will not power ON. Inspect the Pressure Gauge on the top front of the Hood. If the Arrow is to the left outside of the green area, the D1000 Tank needs a replacement.
	The Tank Discharge Hose is not connected Properly. The Range will not Turn ON.	The Tank's Discharge Hose is not Properly connected to the Hood. Place the Hood in the 45deg maintenance position (see D1000 Manual). Attach the Discharge Hose Properly to the Hood, ensure the microswitch is engaged.
	The Temperature at the Hood is above 190'F. The Range will not Power ON.	The high temperature thermostat for the Hood activated due to high temperature at the Hood. The Range will not Power ON. Leave the Hood's fan ON for a few minutes to dissipate the heat.
	External Monitoring System Shut Down Fault	The external building monitoring system or alarm system sent a signal to shut down the Range. The Range will not Power ON.
	Start the Clock Box Timer	The Hood is in Normal Operating Mode with no events. The external building monitoring system or alarm system did not send a shutdown signal. The Clock Box Pro timer can be started. The Range will not Power ON.
	The Power Disconnect is Closed. the Range is Powered ON.	The Hood is in Normal Operating Mode with no events. The external building monitoring system or alarm system did not send a shutdown signal. The Clock Box Pro timer is started and counting down. The Range is powered ON.

Clock Box PRO Schematic
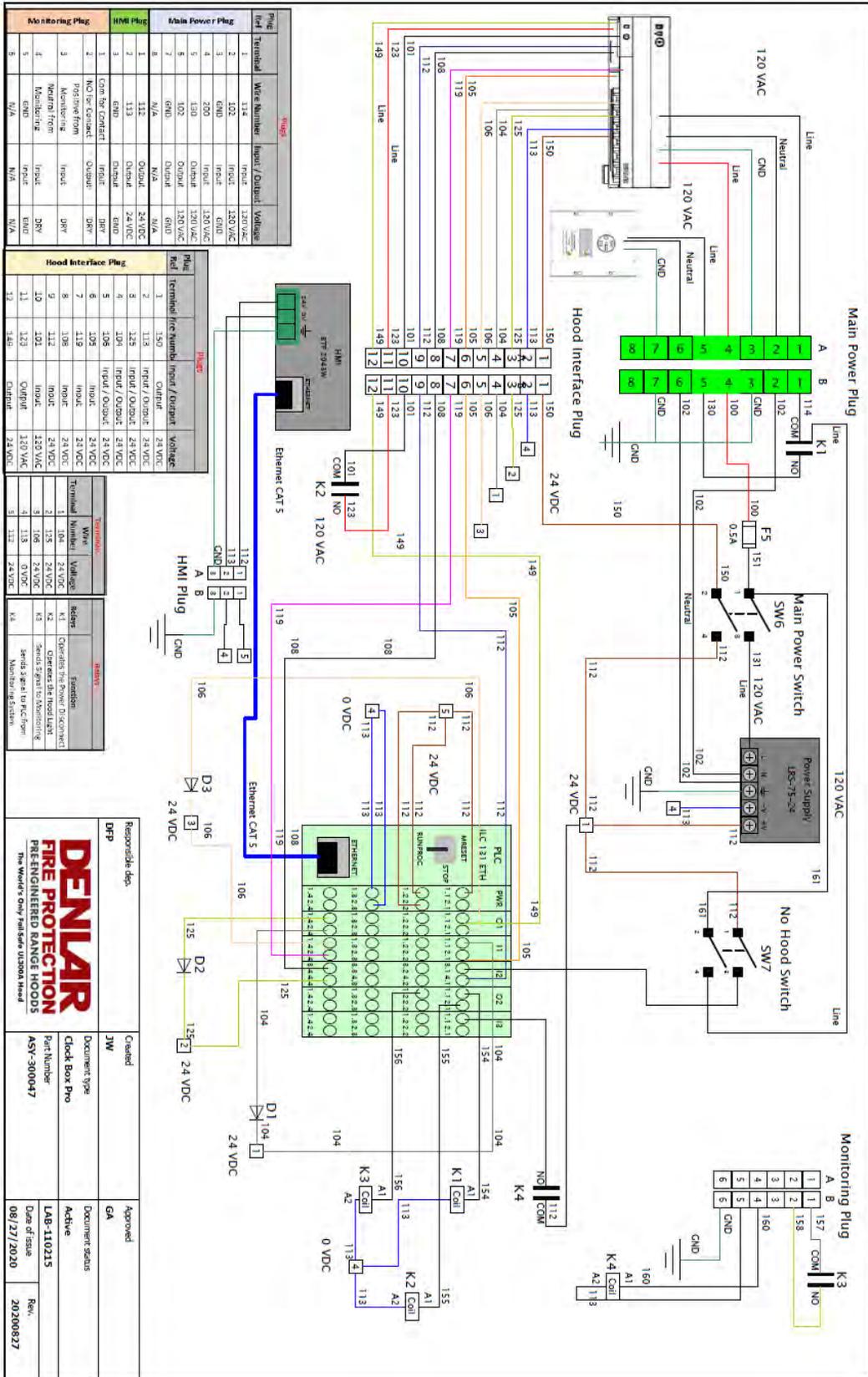
Clock Box PRO Datasheet

Clock Box Pro Datasheet

TYPE	QTY	BRAND	MODEL	COLORS AVAILABLE	MOUNTING CONFIG.	LENGTH (In.)	DEPTH (In.)	HEIGHT (In.)	WEIGHT (Lbs.)	MATERIAL	MOUNTING HEIGHT	VOLTAGE	PHASE	BREAKER SIZE (Amp)	CONTINUOUS OPERATING CURRENT (Amp)
									MATERIAL INFORMATION / MATERIAL SPECIFICATIONS				COMPONENT INFORMATION		
Option	1	DENLAR	CLBX-Pro	Stainless Steel	Surface Mount or Flush Mount	Control Box: 10 Touch Screen:7	Control Box: 4 Touch Screen:3	Control Box: 10 Touch Screen:4.5	18	Galvanized and 304 SS	See Local Codes	110 VAC	1	15	0.1

DENLAR FIRE PROTECTION
PRE-ENGINEERED RANGE HOODS
The World's Only Fail-Safe UL300A Hood

NOTES:

1. Enclosure can be Flush or Surface mounted.
A 120 VAC Plug connection coming from the Hood or Clock Box is needed to be plugged in (Refer to
2. Devices Flow Chart LAB-110207)

CLBX-FLU ASY-500020

CLBX ASY-200047

Surface Mount

HMI Screen for CLBX

Flush Mount

Gas Disconnect Datasheet

D1000-G DATASHEET

D1000-G ASY-20009A

COMPONENT INFORMATION

TYPE	QTY	BRAND	MODEL	COLORS AVAILABLE	MOUNTING CONFIG.
Option	- 1 -	DENLAR	D1000-G	N/A	INLINE

LENGTH (in.)	DEPTH (in.)	HEIGHT (in.)	WEIGHT (lbs.)	MOUNTING HEIGHT	VOLTAGE	PHASE	BREAKER SIZE (Amp)	CONTINUOUS OPERATING CURRENT (Amp)
2.83	2.75	3.96	2	See Local Codes	110 VAC	- 1 -	15	0.10 A

MATERIAL INFORMATION
MATERIAL SPECIFICATIONS

VALVE TYPE	FUNCTION	ACTUATION TYPE	COIL TYPE	BODY MATERIAL	SEAL MATERIAL	ORIFICE SIZE	PORT SIZE	NUMBER OF PORTS	PORT TYPE	MEDIA	MAXIMUM PRESSURE DIFFERENTIAL	MINIMUM FLUID TEMPERATURE	MAXIMUM FLUID TEMPERATURE	FLOW COEFFICIENT
2-WAY	NORMALLY CLOSED	DIRECT LIFT	1/2" NPT CONDUIT, 18" LEADS, CLASS F, NEMA 4X	BRASS	NBR	7/16"	3/4"	2	NPT	GENERAL PURPOSE FOR AIR, LIQUIDS, AND GASES	100 PSI (AC) PSI	0° F	185° F	5 Cv
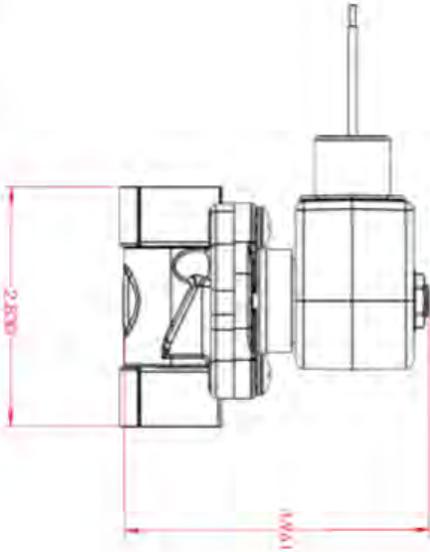
NOTES:

1. A Flexible 16 mm ENT is included with the Assembly (Not Shown).

D1000-G ASY-20009A

2.800

Electrical Disconnect Datasheet

D1000-E DATASHEET

D1000-E ASY-200074

TYPE	QTY	BRAND	MODEL	Construction Data Report	COLORS AVAILABLE	MOUNTING CONFIG.	MATERIAL SPECIFICATIONS					COMPONENT INFORMATION				
							LENGTH (In.)	DEPTH (In.)	HEIGHT (In.)	WEIGHT (Lbs.)	MATERIAL	MOUNTING HEIGHT	VOLTAGE	PHASE	BREAKER SIZE	CONTINUOUS OPERATING
Option	1	DENLAR	D1000-ED	3133316CRT-003	N/A	Surface Mount or Flush Mount	8	3.7	8	6.8	Galvanized	See Local Codes	110 VAC COIL	1	NA	0.25

D1000-E ASY-200074
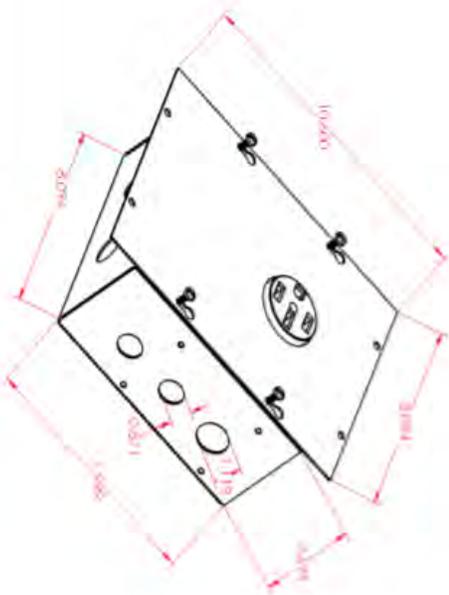
NOTES:

1. Enclosure can be Flush or Surface mounted.

2. A 220 VAC 50Amp Contactor is provided in the Assembly (Not Shown)

3. Installer will provide circuitry proper for the associated range up to 220 VAC and 50 Amps

4. A NEMA 14-50R, 6-20R, 5-20R, OR 5-15R is provided in the Assembly

5. A 120 VAC Plug connection coming from the Hood or Clock Box is needed to be plugged in (Refer to Devices Flow Chart LAB-110084)

D1000-E: Specify NEMA 14-50R, 6-20R, 6-15R, or 5-15R

Contact Information

DENLAR Fire Protection, LLC

10 Denlar Drive

Chester, CT 06412

P: 860-526-9846

F: 860-526-9585

www.denlarhoods.com

Service

860-526-9846 option 2

service@denlarhoods.com

Sales

860-526-9846 option 1

sales@denlarhoods.com

Warranty Information

Specific warranty statement can be found at denlarhoods.com within the product pages or by contacting us via e-mail at info@denlarhoods.com with a request for the Warranty Statement.