LENNOX DOAS

August, 2021

INSTRUCTIONS
SOFTWARE UPDATE – CAREL SMART KEY

Carel Smart Key

⚠ WARNING

1. Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.

2. All units must be wired strictly in accordance with wiring diagram furnished with the unit. Any wiring different from the wiring diagram could result in a hazard to persons and property.

3. All wiring must be done with a wiring material having a temperature rating of at least 105°C.
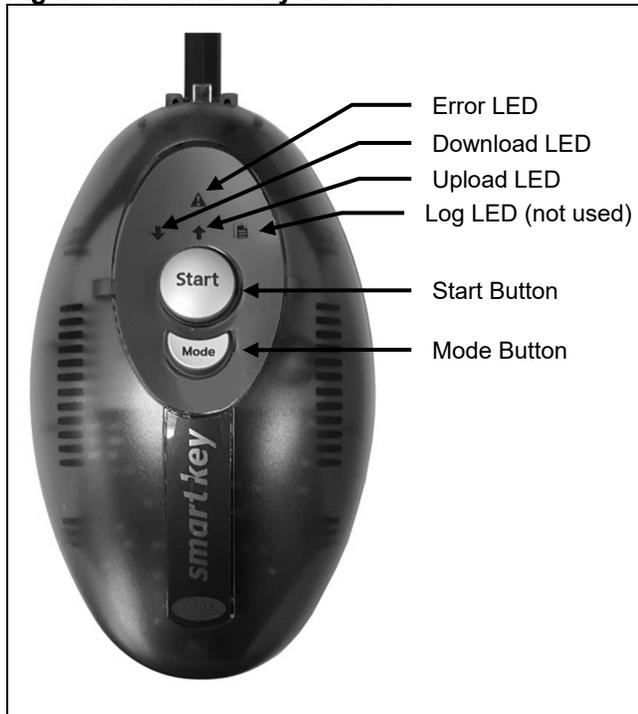
IMPORTANT

1. The use of this manual is specifically intended for a qualified installation and service agency. All installation and service of these units must be performed by a qualified installation and service agency.

2. These instructions must also be used in conjunction with the Installation and Service manual originally shipped with the unit, in addition to any other accompanying component supplier literature.

3. Do not remove the Smart Key while data is being transferred to the key. The file being transferred will be lost and the corresponding space on the Smart Key will not be erased. To restore the original storage capacity of the Smart Key, all files will need to be deleted.

Application

The Carel Smart Key is an electronic device used to simplify the downloading or uploading of the unit specific factory control system programs that reside in the Carel pCO controllers (pCOXS, pCO1, pCOOEM+, pCO3, or pCO5+).

The Smart Key is connected directly to the pCO controller via the RJ-11 cable supplied. The device is powered by the controller; therefore, no external power supply is necessary.

Contents

- Smart Key
- RJ-11 Connector Cable

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Smart Key Interface

Prior to connecting the Smart Key to the pCO controller, familiarize yourself with the interface of the Smart Key. There are several LED indicators and buttons that will be referred to later in the instructions.

Figure 1.1 – Smart Key Interface

- Error LED
- Download LED
- Upload LED
- Log LED (not used)
- Start Button
- Mode Button

Smart Key to pCO Controller Connection

⚠ WARNING

Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.

Prior to transfer the programs to or from the Smart Key, the Smart Key must be connected as follows:

1. Turn off power to the unit.
2. Unplug any pLAN plug in connectors from the pCO controller. Refer to Figure 3.1 for location on the different pCO controllers.
3. Plug the Smart Key into pLAN RJ-11 terminal on the pCO controller using the provided RJ-11 cable. Refer to Figure 3.1 for location on pCO controller.

Program Transfer with the Smart Key

IMPORTANT

Do not remove the Smart Key while data is being transferred to the key. The file being transferred will be lost and the corresponding space on the Smart Key will not be erased. To restore the original storage capacity of the Smart Key, all files will need to be deleted.

With the Smart Key properly connected to the pCO controller as outlined in the previous section, the Smart Key is ready to for the data transfer procedure outlined as follows:
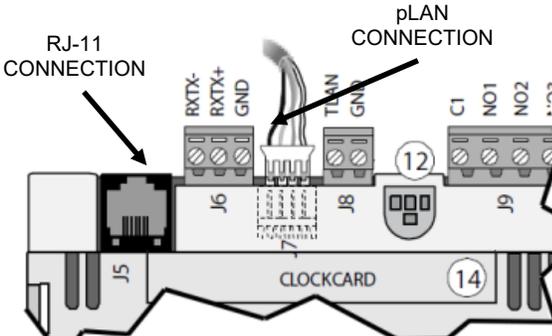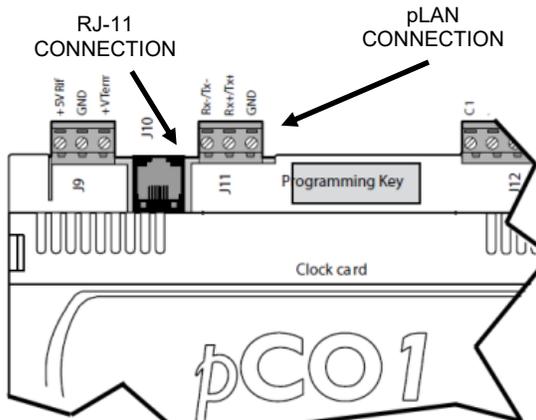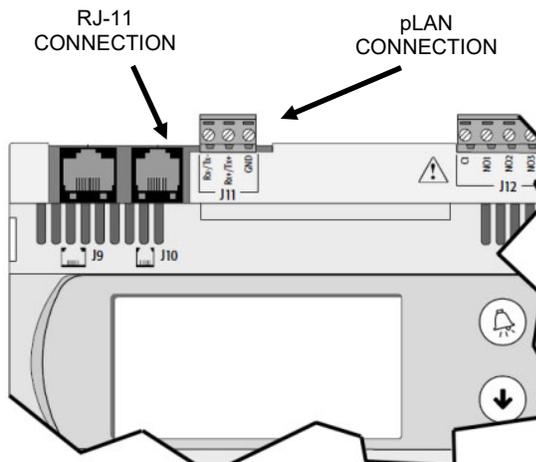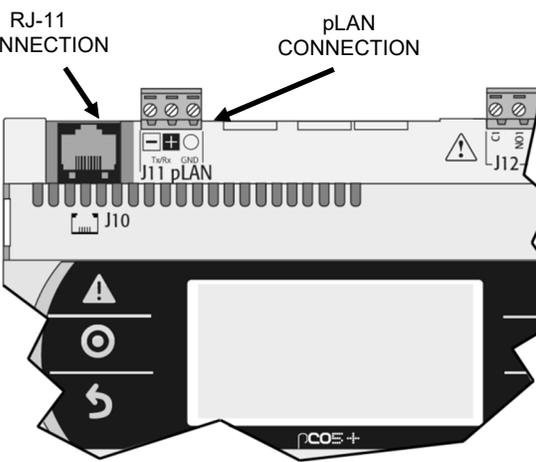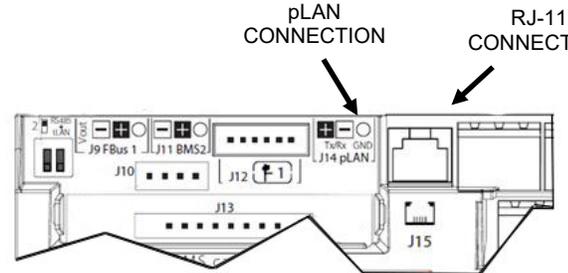
1. Turn on power to the unit. Once the pCO controller has initialized, the Smart Key will then initialize. During this phase, the ↑ and ↓ LED's and Start button will flash. If the Error LED is illuminated, refer to the Error Codes on page 4 for troubleshooting.
2. Once the arrows have stopped flashing and the Start button is on steady, the Smart Key is ready for uploading or downloading. The Smart Key must set for uploading or downloading as follows:
    a. For **UPLOADING** the program from the Smart Key to the pCO controller, the ↑ LED must be illuminated. If it is not, press and hold the Mode button until the Smart Key beeps and the ↑ LED is illuminated. Proceed to Step 3.
    b. For **DOWNLOADING** the program from the pCO controller to the Smart Key, the ↓ LED must be illuminated. If it is not, press and hold the Mode button until the Smart Key beeps and the ↓ LED is illuminated. Proceed to Step 3.

    Note: As part of the data transfer process, the device being written to (pCO or Smart Key) will have its contents erased when the Start button is pressed. For the pCO controller, this may include any user specific settings that existed in the program prior to the upload of the new program version. Be sure to record those settings prior to the upload process.
3. Press Start button to initiate the upload or download. Both arrows will flash at a frequency proportional to the progress of the transfer.
4. When the operation is completed, the buzzer will sound intermittently for 2 seconds. Pressing the Start button again will make the buzzer sound to confirm the operation has been successfully completed without repeating the operation. If the Error LED is illuminated, refer to the Error Codes on page 4 for troubleshooting.
5. If you wish to repeat the operation above, turn off power to the unit, and then repeat steps 1 through 4 above.
6. Once the transfer is complete, follow these steps to complete the process:
    a. Turn off power to the unit.
    b. Unplug the Smart Key from the pCO controller.
    c. Plug in any pLAN plug in connectors that were previously removed.
    d. Turn on power to the unit.

SOFTWARE UPDATE INSTRUCTIONS – Smart Key

Figure 3.1 – pCO Controller Connections

pCOXS	pCO1

pCO3	pCO5+

pCOOEM+	N/A
	N/A

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Smart Key Error Codes

In the event of error, the corresponding symbol ⚠ comes on in combination with the other LEDs. Refer to Tables 4.1 and 4.2 for descriptions of Error Codes.

Table 4.1 – Errors BEFORE Pressing the "Start" Button

Affected LED's and/or Buttons	LED/Button Action	Reason
⚠ + ↑ + ↓	Symbols flashing	Communication error: No response from the pCO or: Key firmware version incompatible
⚠ + Mode	Symbols steady	Password Error
⚠ + Mode	Symbols flashing	Type of key is incompatible
⚠ + ↑	Symbols steady	The key is missing one or more required files (memory empty; no kit for the type of pCO connected).
⚠ + ↑ + Start	Symbols steady + flashing "start"	Incompatibility between the software on the key and the pCO hardware.
⚠ + ↑ + Mode	Symbols steady + flashing "mode"	Incompatibility between pCO application and hardware (application size)
⚠	Steady	Type of key not programmed

Table 4.2 – Errors AFTER Pressing the "Start" Button

Affected LED's and/or Buttons	LED/Button Action	Reason
⚠ + Start + ↑ + buzzer	Symbols flashing and buzzer sounding intermittently	Write operation failed
⚠ + Start + ↓ + buzzer	Symbols flashing and buzzer sounding intermittently	Read operation failed
⚠	Flashing	Generic Error

Lennox Industries, Inc. has a continuous product improvement program,
and therefore reserves the right to change design and specifications without notice.

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