

PACKAGED UNITS KITS AND ACCESSORIES

506335-03
2/2018
Supersedes 506335-02

LOW AMBIENT KIT

INSTALLATION INSTRUCTIONS FOR LOW AMBIENT KIT USED ON KG/KC/KH/KD PACKAGED ROOFTOP UNITS

Shipping and Packing List

14D89 & 14D96

Package 1 of 1 contains:

- 1- Pressure switch (S11)
- 2- Wire harnesses
- 1- Relay (K10 or K58)
- 1- Screw
- 1- Valve depressor tee

54W16

Package 1 of 1 contains:

- 2- Pressure switches (S11, S84)
- 2- Wire harnesses

14N31

Package 1 of 1 contains:

- 3- Pressure switches (S11, S84, S185)
- 1- Wire harness

15C84

Package 1 of 1 contains:

- 2- Pressure switches (S11, S185)
- 2- Relays (K58, K159)
- 1- Wire harness
- 1- Valve depressor tee

⚠ CAUTION

As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional HVAC installer or equivalent, service agency, or the gas supplier

Application

See table 1 for usage.

TABLE 1

Box	Unit	Cat. #	LB #
A	KG/KC 024-090	14D89	LB-107318BT
A	KH 024-074S	14D96	LB-107318BR
A	KHB/KDB 024-060H	15C84	603364-31
B	KG/KC 092-150, KHA 092S-150S	54W16	603364-06
B	KHB/KDB 092H-122H	14N31	603364-30

The low ambient pressure switches cycle the outdoor fan while allowing compressor operation in the cooling cycle. This intermittent fan operation results in a high evaporating temperature which allows the system to operate without icing the evaporator coil and losing capacity. This kit is designed for use in ambient temperatures no lower than 0°F (-17.8°C) unless otherwise noted in the Engineering Handbook.

Install a belly-band style crankcase heater on compressors which don't have one.

Install Pressure Switch

- 1- Disconnect power to unit.
- 2- Refer to table 2 for figure number showing switch location. Open appropriate unit panel.
- 3- *024-090 Units* -
Install the valve depressor tee on the liquid line pressure tap. See figure 1 and 2.
- 4- Install pressure switches on liquid line pressure taps or valve depressor tee.
- 5- Check system for leaks.

TABLE 2

Unit	Switch Location
KG/KC 024-090 KH 024-074S	Figure 1
KD/KH 024-060H	Figure 2
KG/KC 092-150, KHA 092S-150S	Figure 3
KHB/KDB 092H-122H	Figure 4



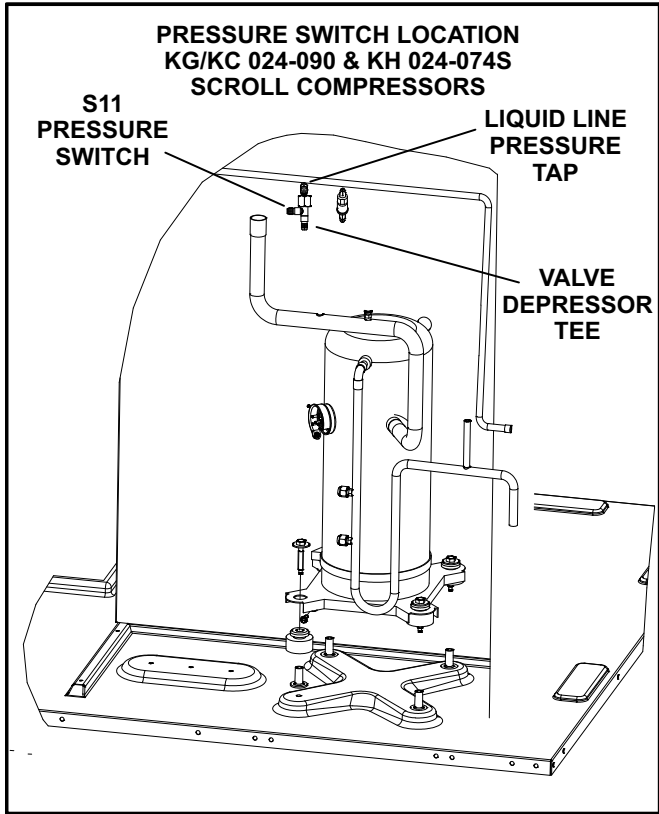


FIGURE 1

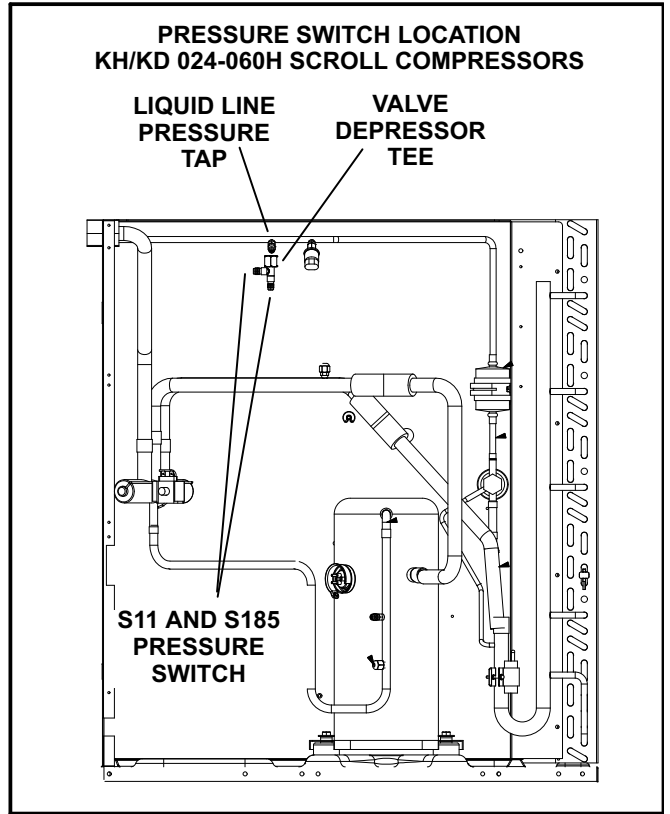


FIGURE 2

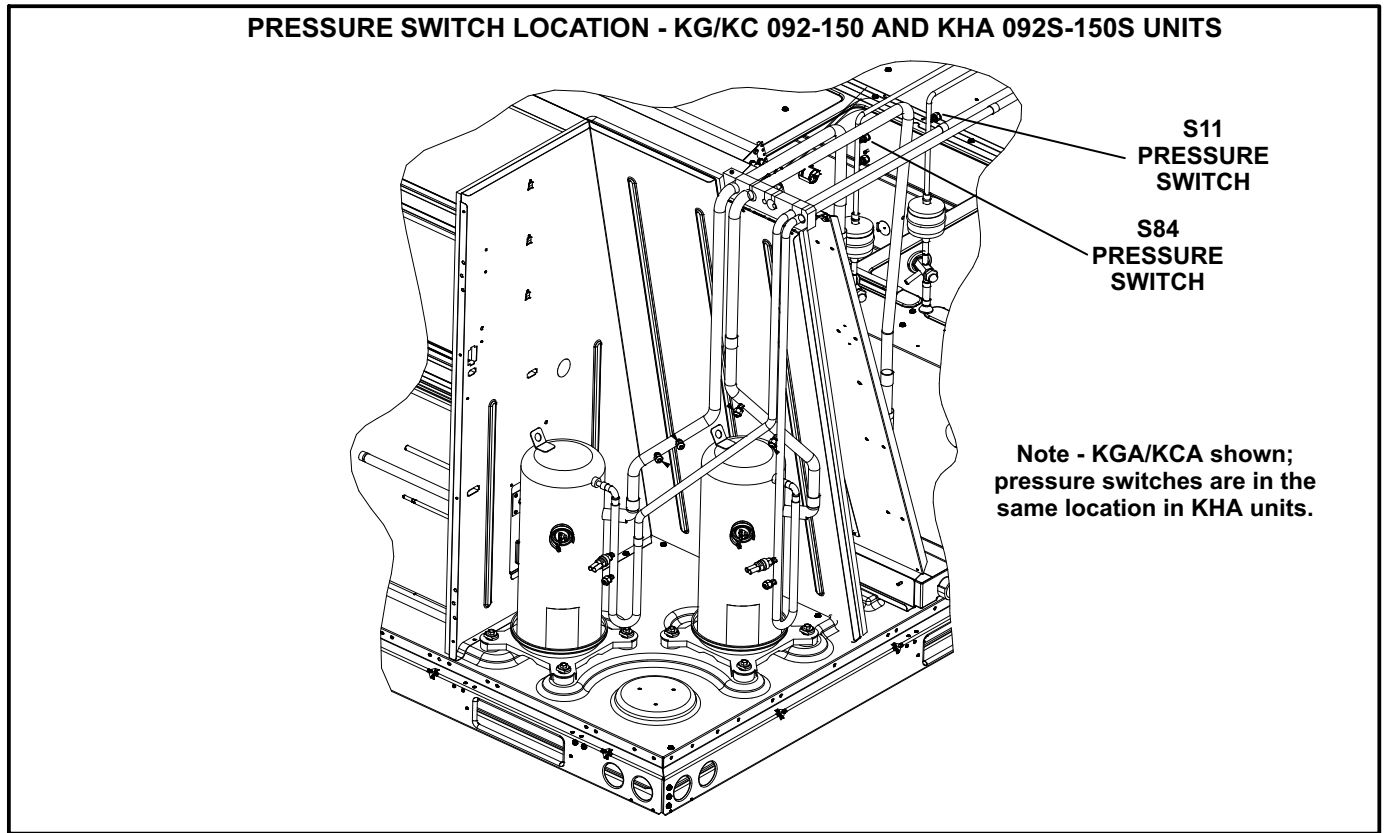


FIGURE 3

PRESSURE SWITCH LOCATION - KHB/KDB 092H-122H UNITS

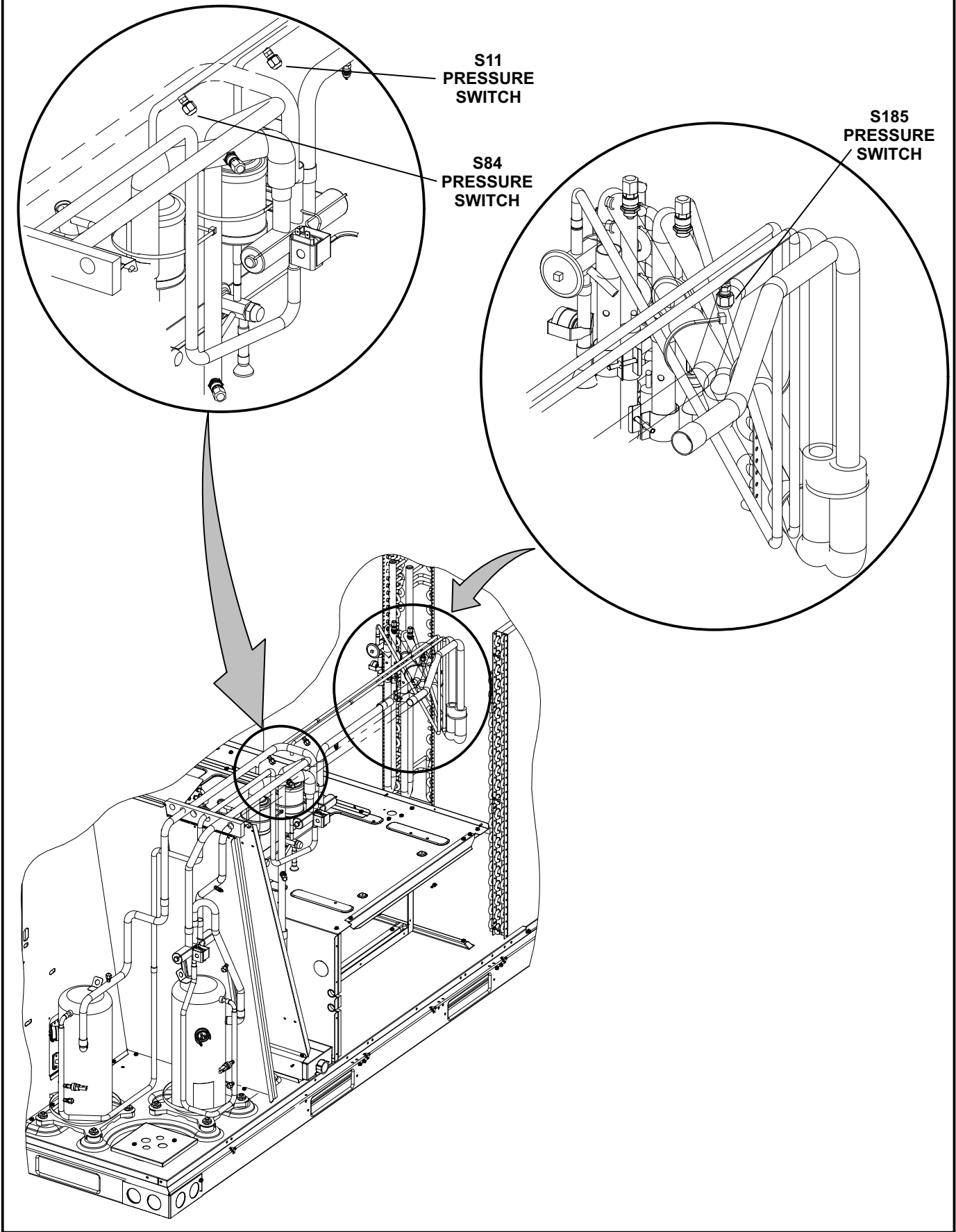


FIGURE 4

Install Relay - KG/KC 024-090, KH 024-074

1- Install the relay in units shown in table 3. Refer to figure 5 for KG/KC and KH standard efficiency unit relay location. Refer to figure 6 for KH/KD high efficiency relay location. Secure with screws provided in kit.

TABLE 3

Unit	Wiring Diagram Key No.
KG/KC 024-090 Y & P Volt	Relay not required; discard.
KG/KC 036-090 M, G & J Volt*	K10
KH 024-074S	K58
KH/KD 024-060H	K58, K159

*Caution - Pressure switch is not rated for applications above 240V. Relay must be used in high voltage applications.

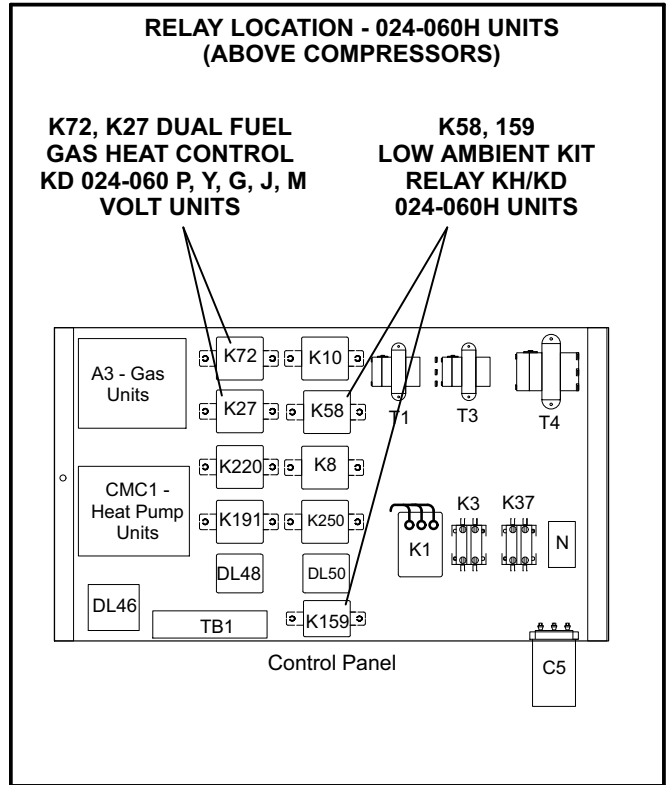
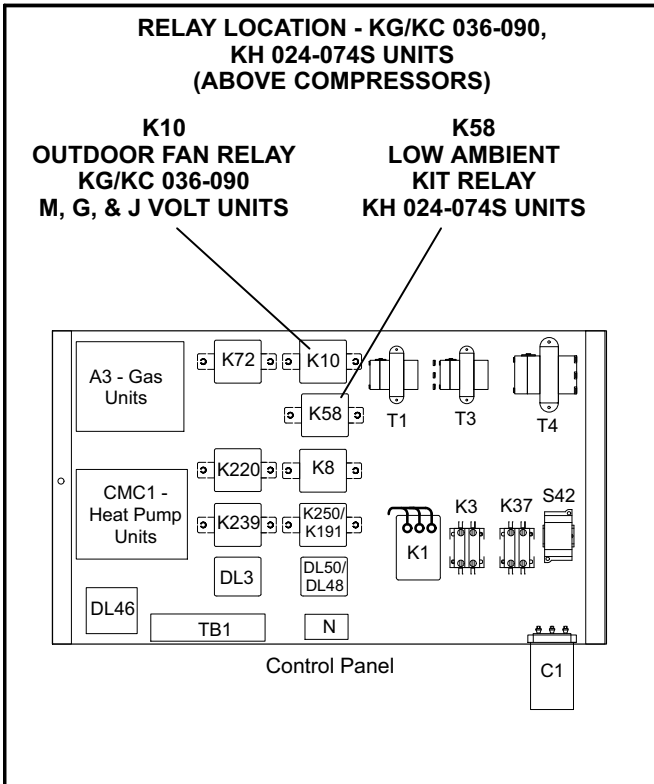


FIGURE 6

Wiring - 024-090 Units

**TABLE 4
024-090 UNIT WIRING**

Kit	Unit	Wiring	Notes	Reference Diagram
14D89	KG/KC 024-060 P Volt KG/KC 036-090 Y Volt	Figure 7	Discard relay and longer harness.	P volt - 537780 Y volt - 537777
14D89	KG/KC 036-090 G, J, M Volt	Figure 8	All kit components used.	537777
14D96	KH 024-074S P, Y Volt	Figure 9 & Figure 11*	P, Y volt units do not use K10. Figure 9 shows the multi-wire harness.	P volt - 537780 Y volt - 537777
14D96	KH 036-074S G, J, M Volt	Figure 10 & Figure 11*	Figure 10 shows the multi-wire harness.	537779
15C84	KD/KH 024-060H P, Y, G, J, M Volt	Figure 12	One harness	537855-537858

*Two-wire harness shown.

- 1- Wire pressure switches. Refer to table 4 for appropriate wiring diagram. Wires are stamped as shown in each figure.
- 2- Bundle wiring and secure away from unit components.

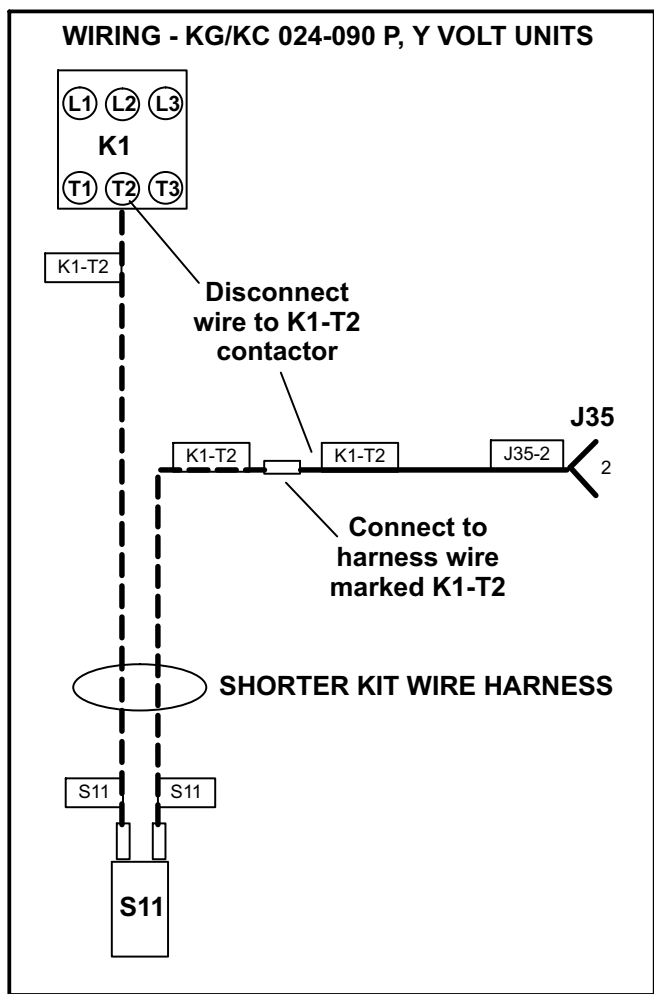


FIGURE 7

WIRING - KG/KC 036-090 G, J, M VOLT UNITS

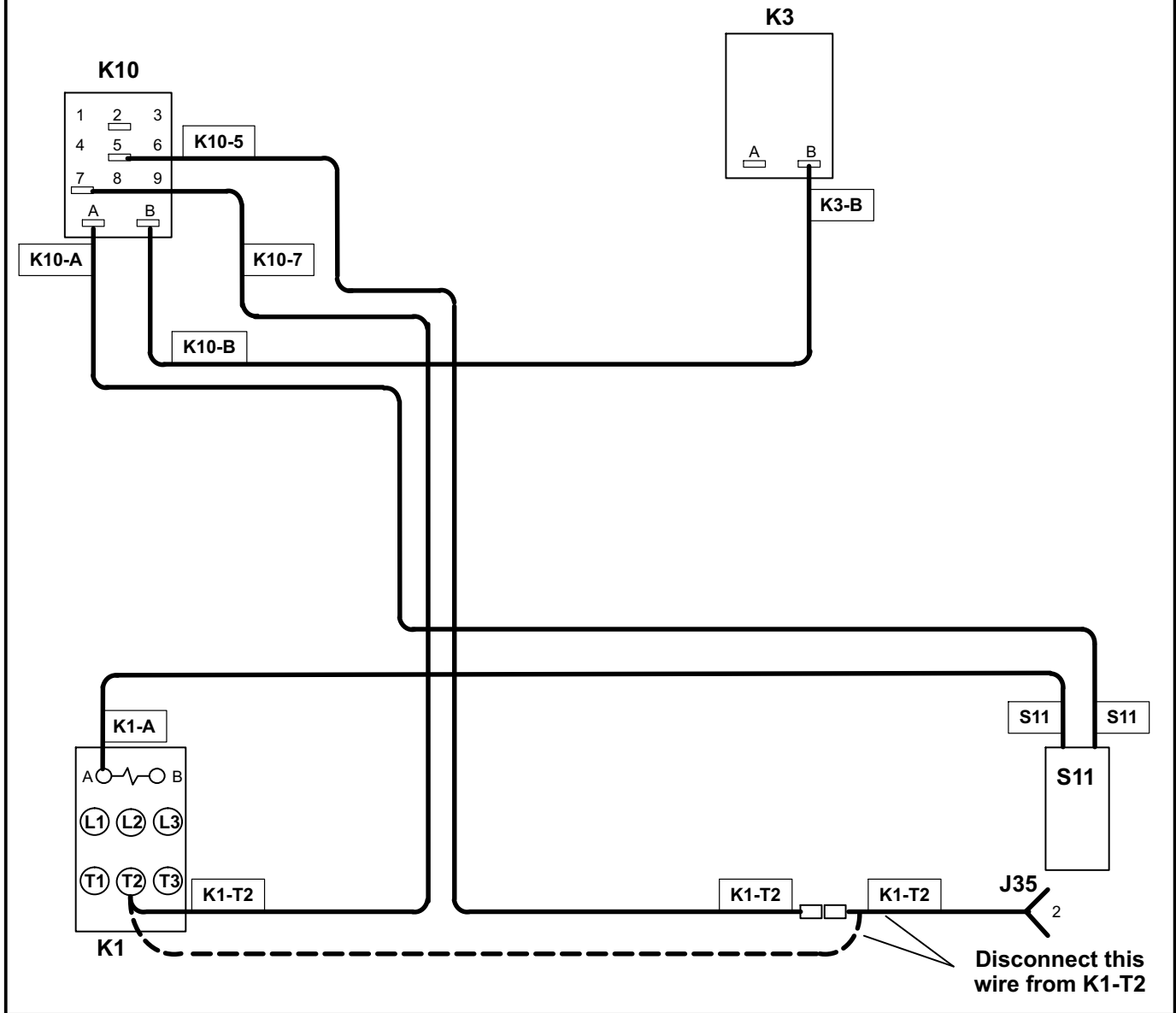


FIGURE 8

**WIRING - KH 024-074S P, Y VOLT UNITS
MULTI-WIRE HARNESS**

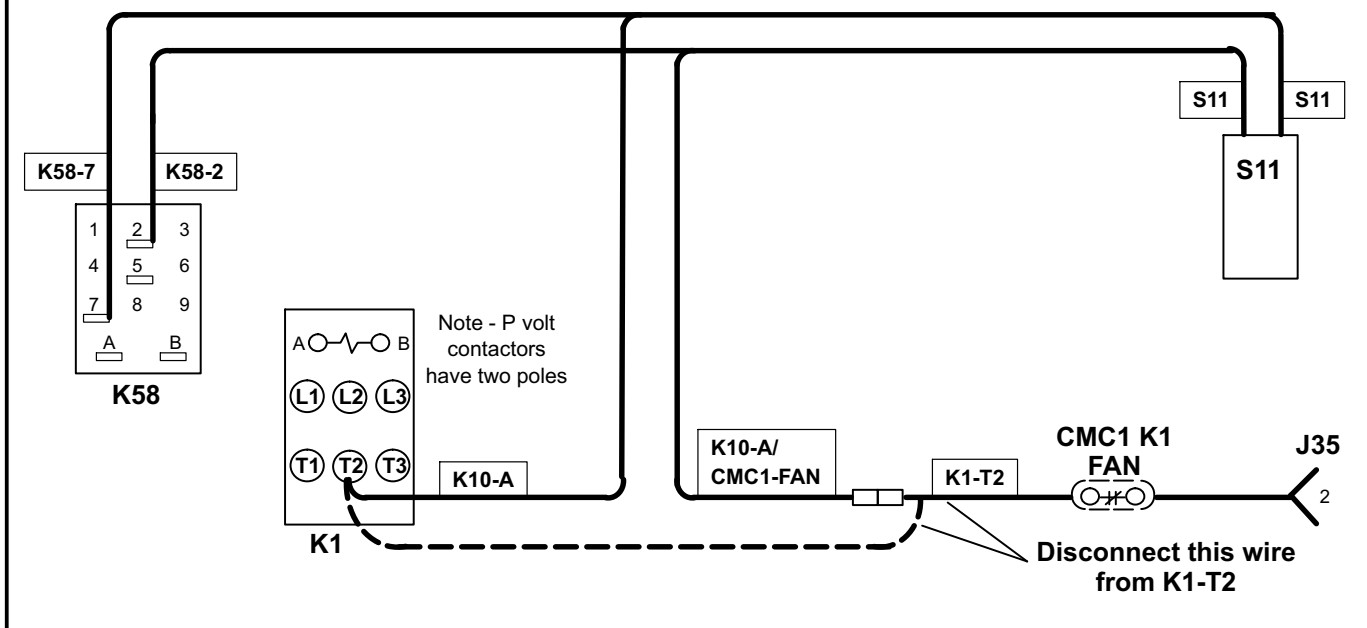


FIGURE 9

**WIRING - KH 036-074S G, J, M VOLT UNITS
MULTI-WIRE HARNESS**

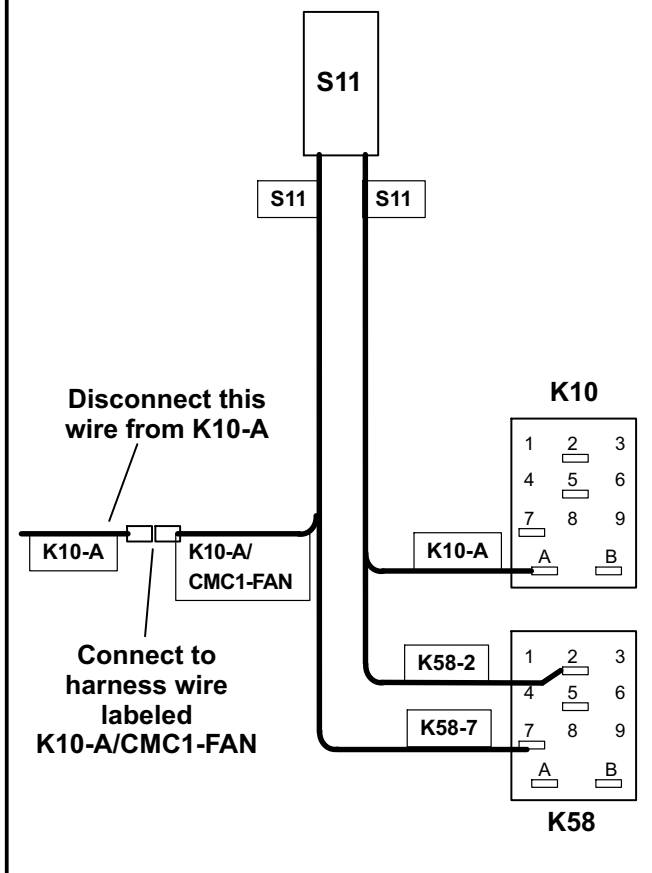


FIGURE 10

**WIRING - ALL KH 024-074S UNITS
TWO-WIRE HARNESS**

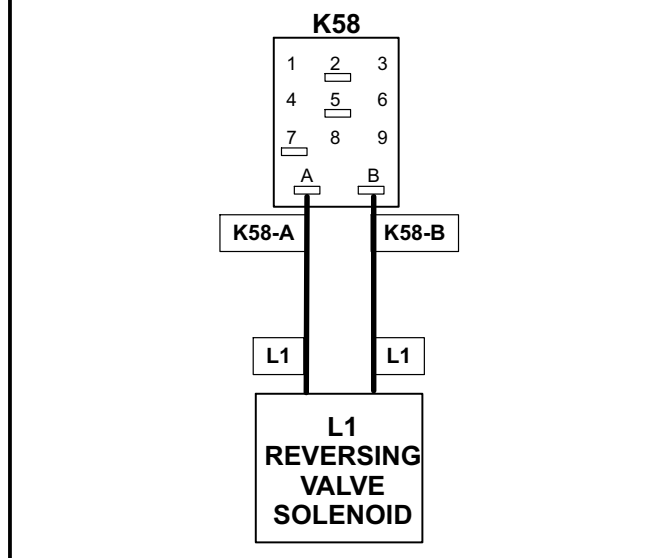


FIGURE 11

WIRING - KD/KH 024-060H UNITS ALL VOLTAGES

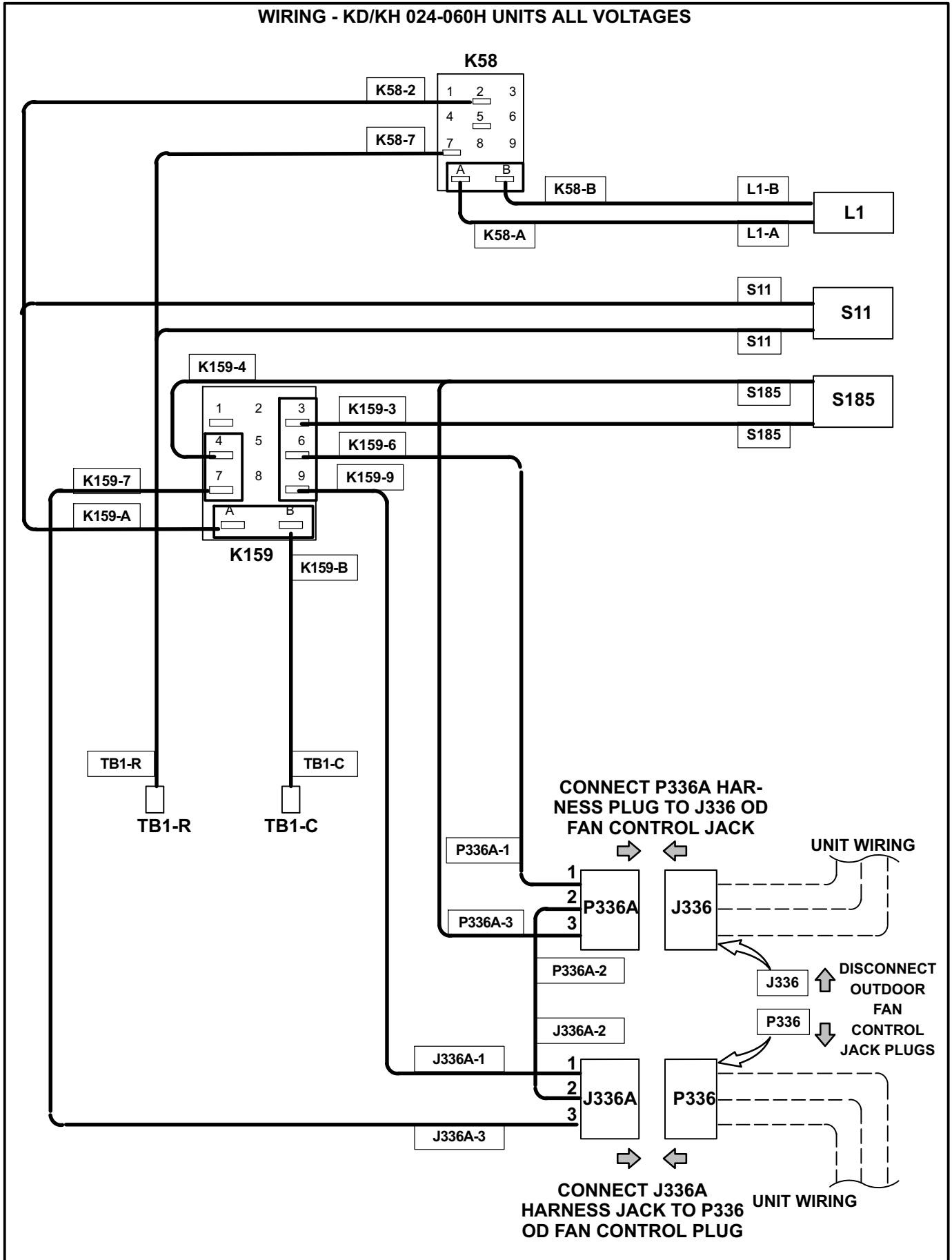


FIGURE 12

Wiring - KG/KC/KH/KD 092-150 Units

- 1- Disconnect wires marked S11 as shown in figure 14.
- 2- Locate shorter kit harness and connect wires as shown in figure 13.

Note - Kits for KHB/KDB092H-122H units contain only one harness.

- 3- *KHA 092S-150S Units Only -*
Locate longer kit harness. Disconnect wire to CMC1-FAN and connect to harness wire stamped "CMC1-FAN/P35-6". See figure 15. Connect harness as shown in figure 16. Discard longer harness when installing a KG or KC unit.
- 4- *KHB/KDB 092H-122H Units Only -*
Route the S185 pressure switch wires near the jumper plug shown in figure 14. Remove jumper plug and connect wires from S185.
- 5- Bundle wiring and secure away from unit components.

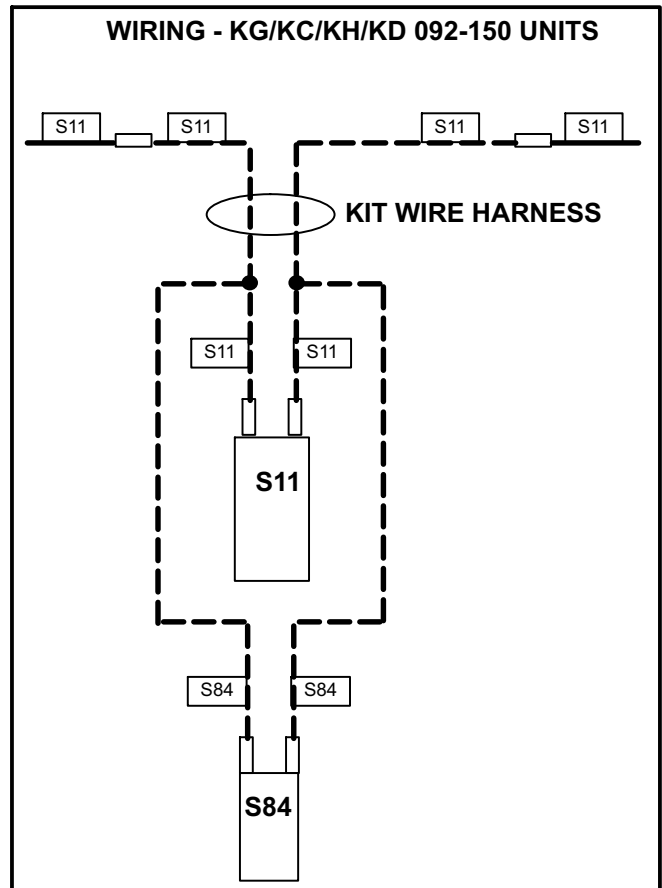


FIGURE 13

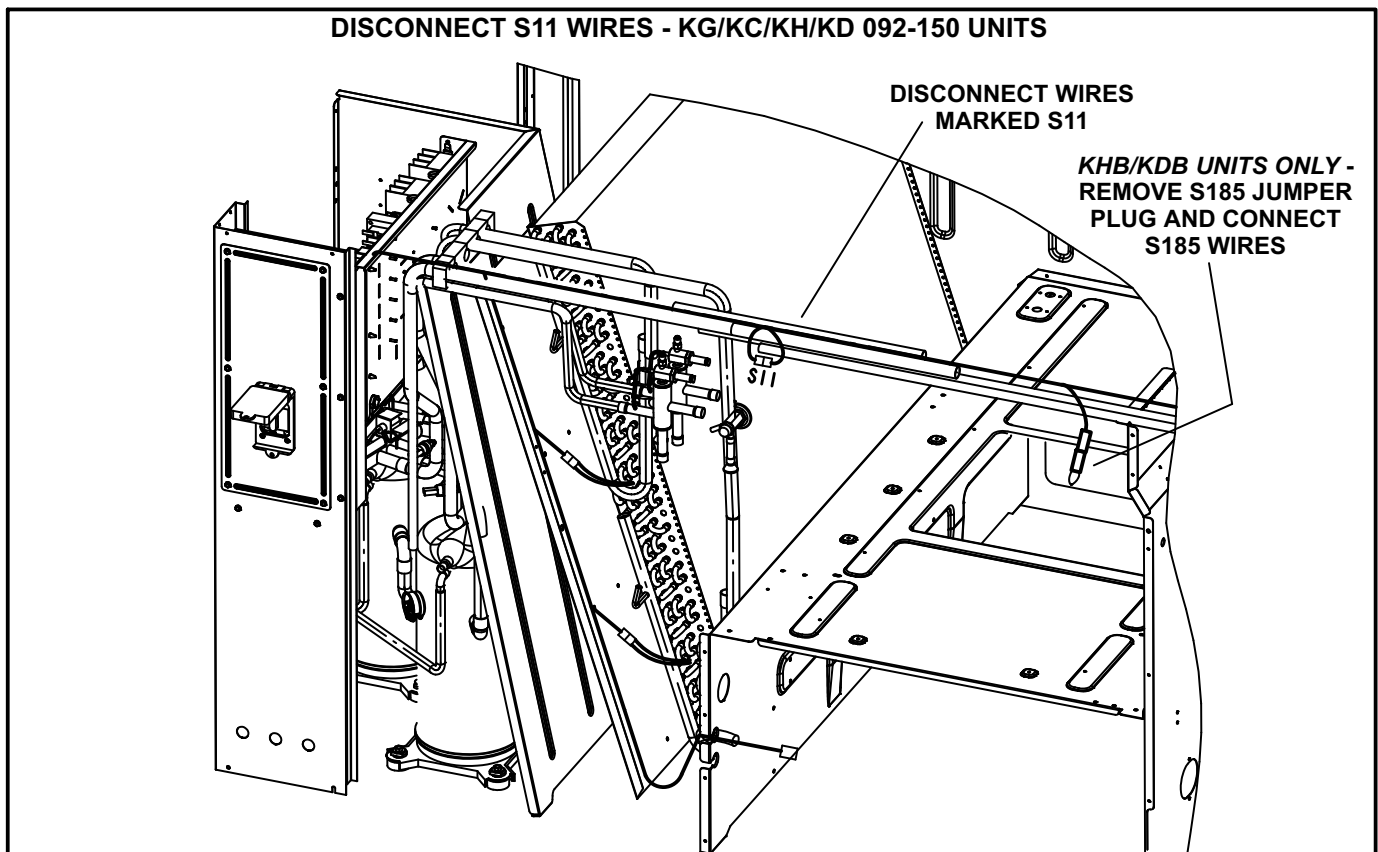
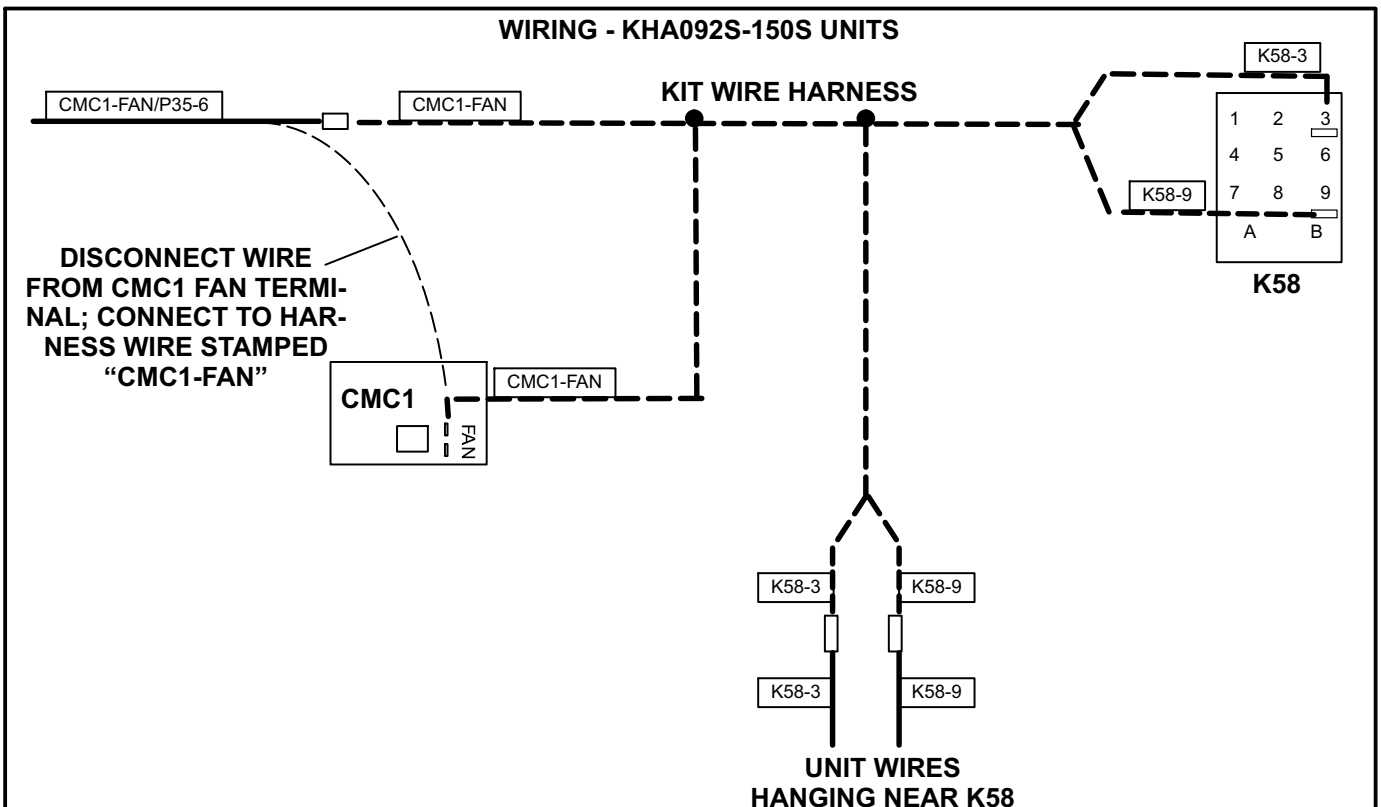
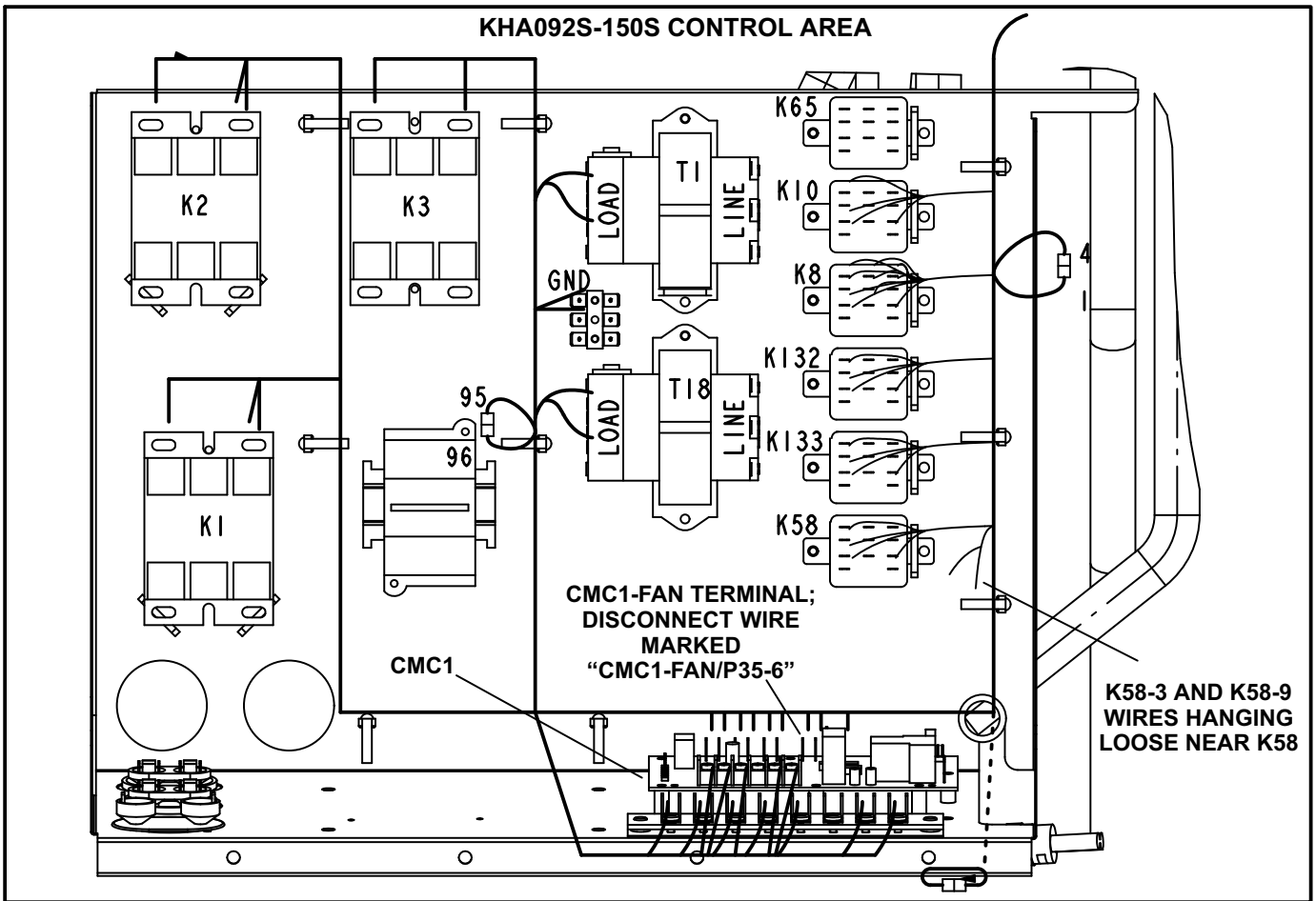


FIGURE 14



Operation

Outdoor fans will be energized when the liquid pressure rises to 450 psig (3103kPa) and de-energize when liquid pressure drops to 240 psig (1655kPa).

KGA/KCA/KHA 092S-150S -

Outdoor fans cycle together (all switches must be open).

KHB/KDB 024H-122H -

See table 5 for outdoor fan operation.

TABLE 5

Liquid Pressure (psig)	Operation
↓ From 450 to 240	All OD Fans On
↓ From 240 to 180	All OD Fans at 25% of Full Speed
↓ From 180 to 0	All OD Fans Off
↑ From 0 to 300	All OD Fans Remain Off
↑ From 300 to 450	All OD Fans at 25% of Full Speed
↑ From 450 to higher	All OD Fans On