

# Installation guide

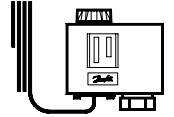
## Thermostat

### Types KP 61 - KP 81

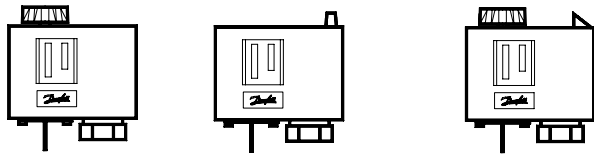
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KP 61, KP 62, KP 63, KP 68, KP 69 vapor charge  
 KP 71, KP 73, KP 75, KP 77, KP 79, KP 81 adsorption charge (cross ambient)

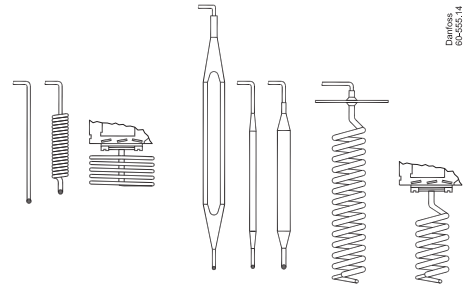


#### Types



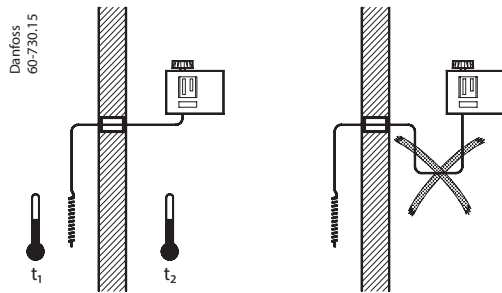
Auto reset      Manual reset (w/o hand knob)      Auto reset w/ hand switch

#### Bulb types



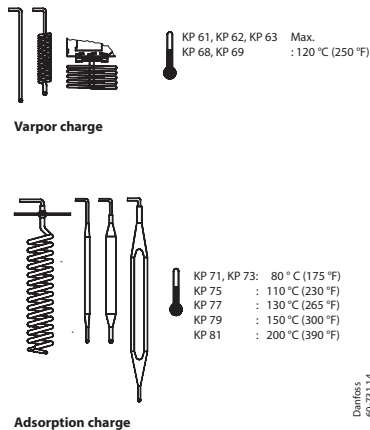
Vapor charge      Adsorption charge

#### Mounting requirement

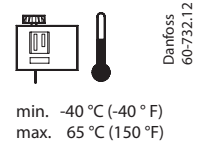


Vapor charge       $t_2 \geq t_1 + 2^\circ\text{C} (3.5^\circ\text{F})$

#### Max. bulb temperature



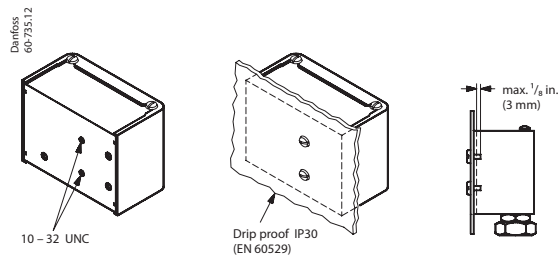
#### Ambient temperatures



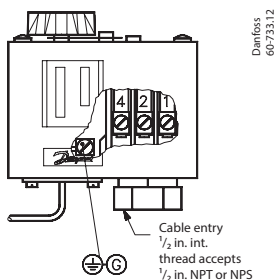
#### Enclosure



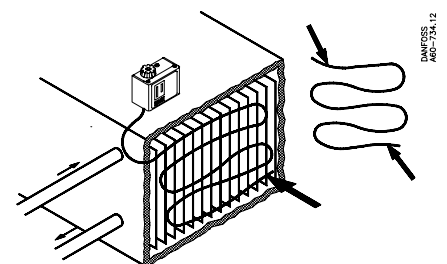
**CAUTION:** The mounting panel must be plane to avoid damage of control.



#### Cable entry



#### Required cap. tube length on evaporator



80 in. cap. tube: min. 16 in.  
 196 in. cap. tube: min. 22 in.

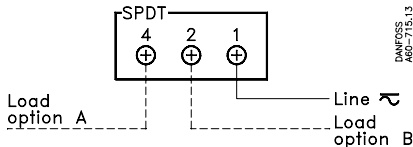
### Wiring



**CAUTION:** Disconnect power supply before wiring connections are made to avoid possible electrical shock or damage to equipment.

All wiring should conform to the National Electrical Code and local regulations.

Terminal block



**CAUTION:** Use terminal screws furnished in the contact block.  
Use tightening torque 20 lb. in. (2.3 Nm).  
Use copper wire only.

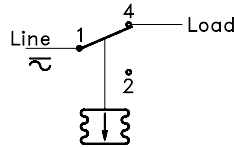
Contact load ratings

120V a.c.	16 FLA, 96 LRA
240V a.c.	8 FLA, 48 LRA
240V d.c.	12W pilot duty

### Load Option A

CUT-OUT on temperature drop

Wire terminals 1 - 4:  
CUT-IN = High Set Point (HSP) see "Setting"  
CUT-OUT = Low Set Point (LSP) see "Setting"



Terms 1 - 4 close on temperature rise  
Terms 1 - 4 open on temperature drop

Example: CUT-IN = 10 °C (50 °F)  
CUT-OUT = 4.5 °C (40 °F)

This means  
CUT-IN = HSP = 10 °C (50 °F)  
and  
CUT-OUT = LSP = 4.5 °C (40 °F)

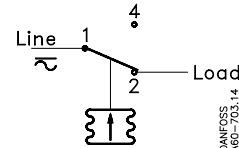
**Note:**

= Bellows movement on pressure rise  
 = Bellows movement on pressure drop  
The free terminal can be used for signal purpose.

### Load Option B

CUT-OUT on temperature rise

Wire terminals 1 - 2:  
CUT-IN = Low Set Point (LSP) see "Setting"  
CUT-OUT = High Set Point (HSP) see "Setting"



Terms 1 - 2 close on temperature drop  
Terms 1 - 2 open on temperature rise

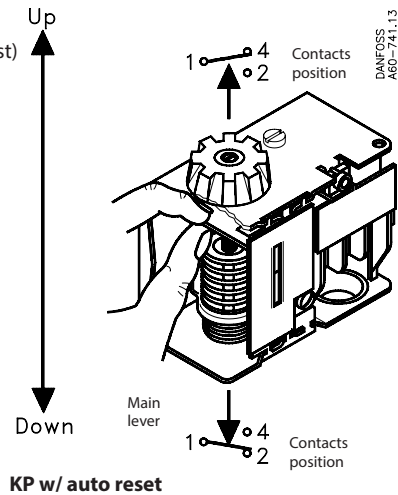
Example: CUT-IN = 0 °C (32 °F)  
CUT-OUT = 10 °C (50 °F)

This means  
CUT-IN = LSP = 0 °C (32 °F)  
and  
CUT-OUT = HSP = 10 °C (50 °F)

### Manual tripping

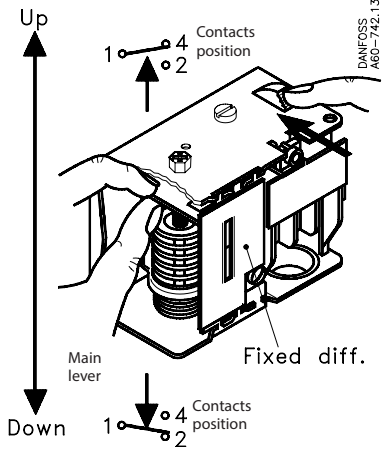
(Electrical contacts/wiring test)

**Note:**  
use FINGERS ONLY!  
(Do NOT use screwdriver)



KP w/ auto reset

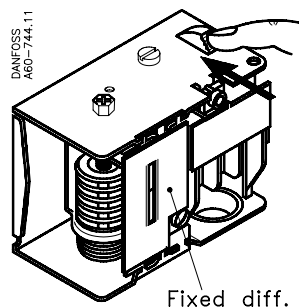
**Note:**  
use FINGERS ONLY!  
(Do NOT use screwdriver)



KP w/ manual reset

**Note:**  
Push manual reset knob during manual tripping.

### Manual reset



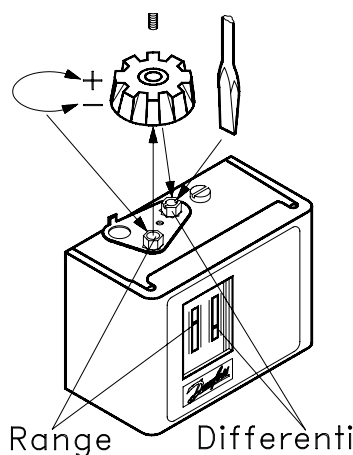
To resume control operation after safety cut-out, push reset knob as indicated.

**Note:**  
Man. reset is possible only after a temperature rise of fixed differential (example 5.4 °F)

### Adjustment spindles location

**Note**

Remove lockplate before thermostat adjustment. Replace lockplate after adjustment (if desired).



**RANGE**

See printed instruction on top of control

- increase temp. (warmer): turn CW
  - decrease temp. (colder): turn CCW
- (use adjustment knob)

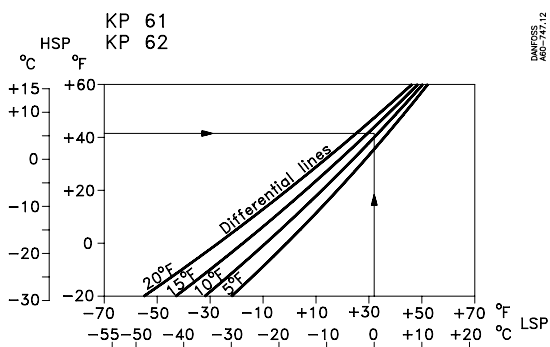
**DIFFERENTIAL**

See printed instruction on top of control

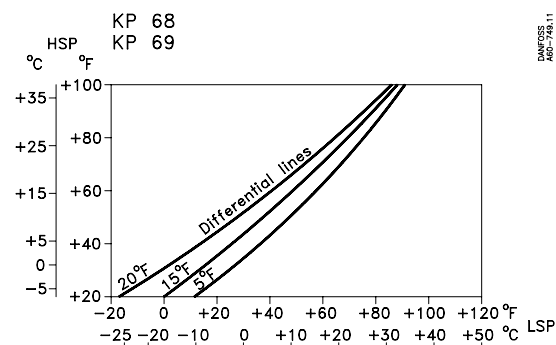
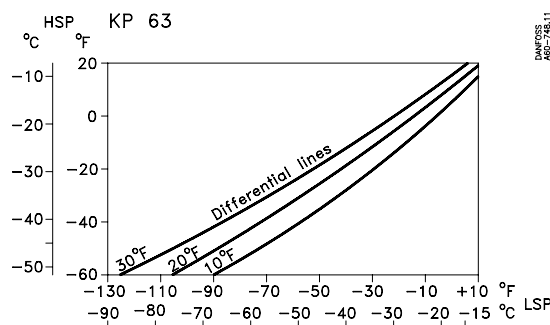
- Increase: turn CW
  - decrease: turn CCW
- (use adjustment knob or screwdriver)

### Determination of differential

For KP w/ vapor charge and auto. reset (KP 61, KP 62, KP 63, KP 68, KP 69): Use graphs to determine correct differential.



Example:  
HSP = 5.6 °C (45 °F) => DIFF (from graph):  
LSP = 0 °C (32 °F)                      7.2 °C (13 °F) (value which has to be set on diff. scale).



For KP w/ adsorption charge (KP 71, KP 73, KP 75, KP 77, KP 79, KP 81):  
The differential will be HSP less LSP

Example:                      HSP - LSP = DIFF.  
7 °C - 5 °C = 2 °C  
(45 °F)(35 °F) (10 °F)

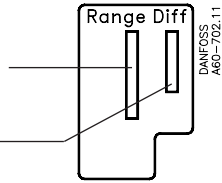
**Note:**  
(Load Option A)                      (Load Option B)  
CUT-IN = HSP                      or                      CUT-IN = LSP  
CUT-OUT = LSP                      CUT-OUT = HSP  
See "Wiring"

## Setting

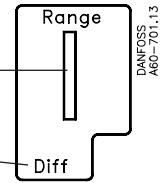
For KP 61, KP 62, KP 63, KP 68, KP 69, KP 71, KP 73, KP 75, KP 77, KP 79 and KP 81 w/auto reset

KP 61 and KP 71 w/man. reset

1. Adjust range spindle to desired HIGH SET POINT (use hand knob)
2. Adjust differential spindle to desired DIFFERENTIAL



1. Adjust range spindle to desired LOW SET POINT
2. DIFFERENTIAL is fixed. Value printed on scale plate



### Note:

To find correct differential, see "Determination of differential"

HIGH SET POINT minus DIFFERENTIAL equals LOW SET POINT

Example:  
 HSP - DIFF. = LSP  
 7 °C - 5 °C = 2 °C  
 (45 °F) - (10 °F) = (35 °F)

HIGH SET POINT minus DIFFERENTIAL equals LOW SET POINT

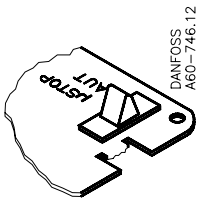
Example:  
 HSP - DIFF. = LSP  
 3 °C - 3 °C = 0 °C  
 (37.4 °F) - (5.4 °F) = (32 °F)

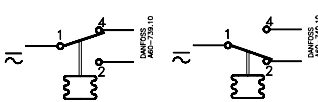
## KP w/ hand switch



### CAUTION:

- Hand switch breaks circuit by micro contact gab.
- Use hand switch for service on refrigeration parts only
- Cut out main switch before service on electrical parts



Switch position	Contacts position
Aut.	Automatic control operation 
μ Stop	1 and 2 are closed 