

Installation guide

# Pressure switch

KP 1, KP 2, KP 5, KP 7W, KP 7B

060R9746

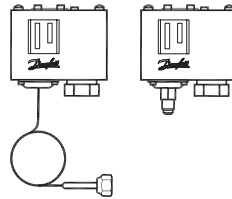
060R9746

**Refrigerants:**

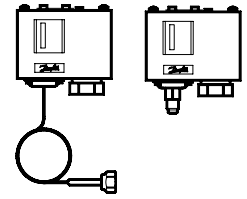
R22, R134a, R404A, R407A, R407C, R407F, R422B, R422D, R448A, R449A, R450A, R452A, R507A, R513A

For complete list of approved refrigerants, go to <http://products.danfoss.com/all-products/>

**Auto reset:**  
KP 1, KP 2, KP 5, KP 7W



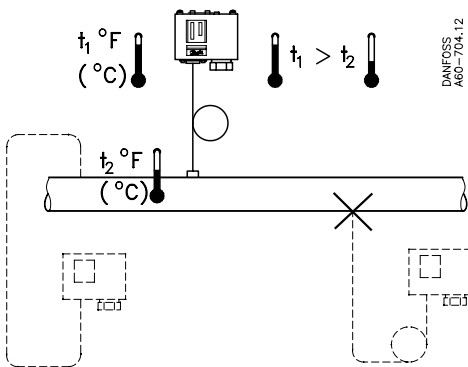
**Manual reset:**  
KP 1, KP 5, KP 7B



**CAUTION:**

Do not install these controls on ammonia systems.

**Mounting requirements**



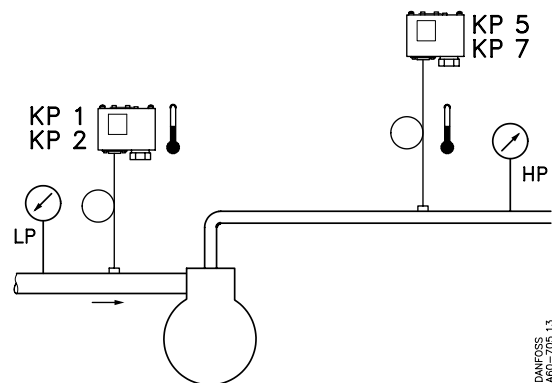
DANFOSS  
A60-704.12



**CAUTION:**

Do not mount the control in a position where dirt, sediment or oil will affect the operation of the control.

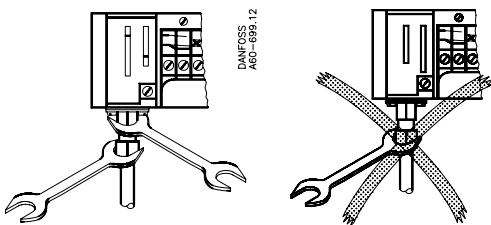
**Ambient temperatures**



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A60-706.13

**t<sub>1</sub> min. KP 1, KP 2, KP 5:** -40 °F (-40 °C)  
**t<sub>1</sub> min. KP 7:** -13 °F (-25 °C)  
**t<sub>1</sub> max.:** 149 °F (65 °C)

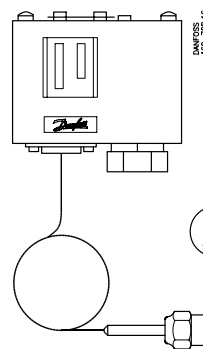
**Mounting**



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A60-699.12

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A60-468.12

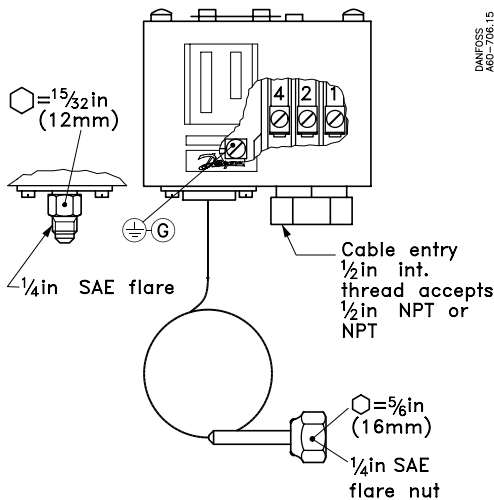
**Test pressure (P<sub>test</sub>)**



**P<sub>test</sub> max.:**

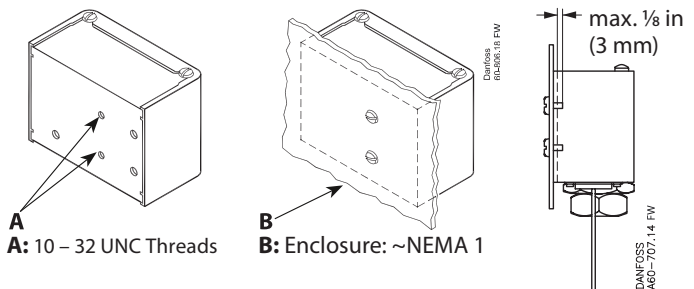
**KP 1, KP 2:** 285 psig (20 bar p<sub>e</sub>)  
**KP 5, KP 7:** 510 psig (35 bar p<sub>e</sub>)  
**KP 2:** 174 psig (12 bar p<sub>e</sub>)

**Connections**



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**Enclosure**



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A60-707.14 FW

DANFOSS  
A60-707.14 FW



**CAUTION:**

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



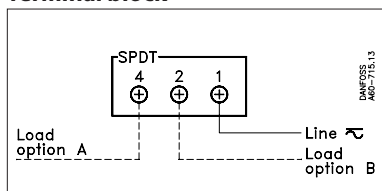
**CAUTION:**

Disconnect power supply before wiring connections are made or service to avoid possible electrical shock or damage to equipment. Do never touch live parts with your fingers or with any tool.

**Wiring**

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

**Terminal block**



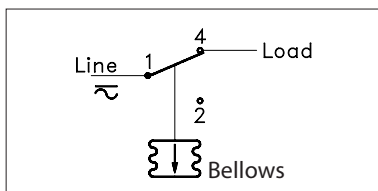
**CAUTION:**

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



**Load Option A**

CUT-OUT on pressure 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 pressure rise  
 Terms 1-4 open on pressure drop

**Example:**

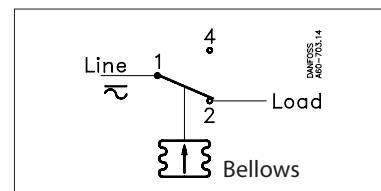
CUT-IN = 30 psig  
 CUT-OUT = 10 psig

**This means:**

CUT-IN = HSP = 30 psig  
 CUT-OUT = LSP = 10 psig

**Load Option B**

CUT-OUT on pressure 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 pressure drop  
 Terms 1-2 open on pressure rise

**Example:**

CUT-IN = 250 psig  
 CUT-OUT = 350 psig

**This means:**

CUT-IN = LSP = 250 psig  
 CUT-OUT = HSP = 350 psig

**Contact load ratings**

120 V AC	16 FLA, 96 LRA
240 V AC	8 FLA, 48 LRA
240 V DC	12 W pilot duty

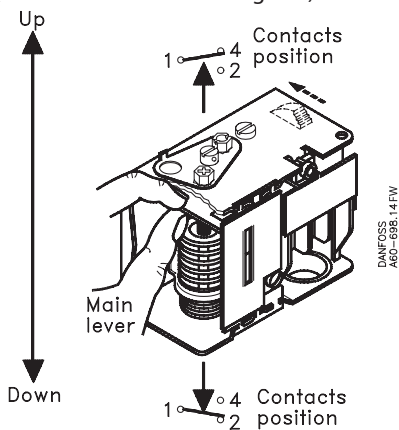
**Note:**



The free terminal can be used for signal purpose.

**Manual trip function**

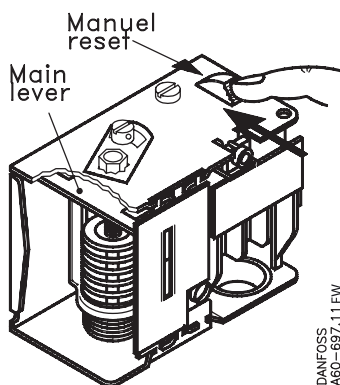
(Electrical contacts / wiring test)



**TRIP (main lever) use FINGERS ONLY! (Do NOT use screwdriver)**

**Note:**  
**KP 1, KP 5 and KP 7B with man. reset:**  
 Push manual reset knob during manual tripping.

**Manual reset**

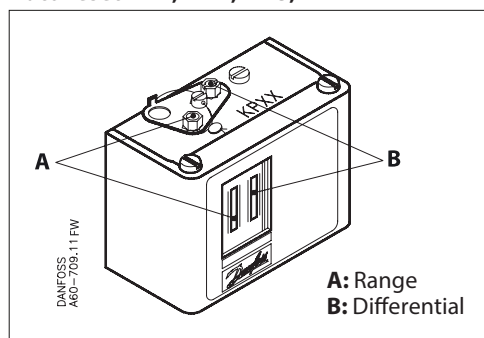


To resume control operation after safety cutout, push reset knob as indicated.

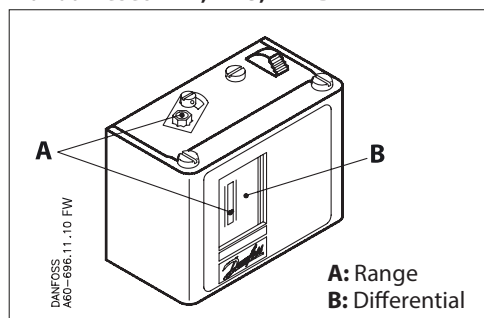
**Note:**  
**KP 1**, man. reset is possible only after a pressure rise of 10 psi (0.7 bar). **KP 5** and **KP 7B**, man. reset is possible only after a pressure drop of respectively 43 psi (3.0 bar) and 58 psi (4.0 bar).

**Adjustment spindle(s) location**

**Auto reset KP 1, KP 2, KP 5, KP 7W**



**Manual reset KP 1, KP 5, KP 7B**

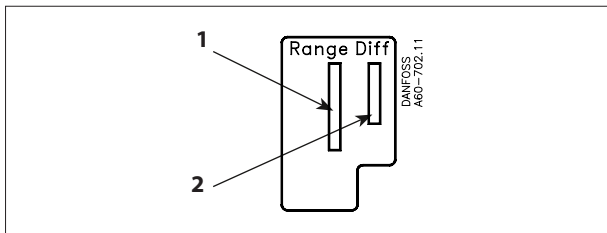


Type	Differential
<b>KP 1</b>	10 psi (0.7 bar)
<b>KP 5</b>	43 psi (3 bar)
<b>KP 7B</b>	58 psi (4 bar)

### Setting

(see also "Wiring")

#### KP 1 (auto reset), KP 2, KP 5, KP 7W, KP 7B

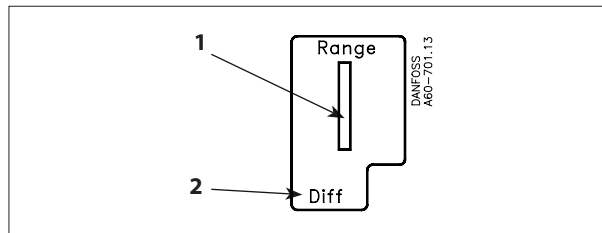


1. Adjust range spindle to desired HIGH SET POINT (HSP)
2. Adjust differential spindle to desired DIFFERENTIAL (DIFF.)

#### Note:

KP 5 (manual reset) and KP 7B have fixed diff. Value printed on scale plate.

#### KP 1 (manual reset ONLY)



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

HIGH SET POINT minus DIFFERENTIAL equals LOW SET POINT

#### Example:

$$\begin{array}{rcl} \text{HSP} & - & \text{DIFF.} & = & \text{LSP} \\ 30 \text{ psig} & - & 20 \text{ psi} & = & 10 \text{ psig} \\ (2.1 \text{ bar}) & & (1.4 \text{ bar}) & & (0.7 \text{ bar}) \end{array}$$

LOW SET POINT plus DIFFERENTIAL equals HIGH SET POINT

#### Example:

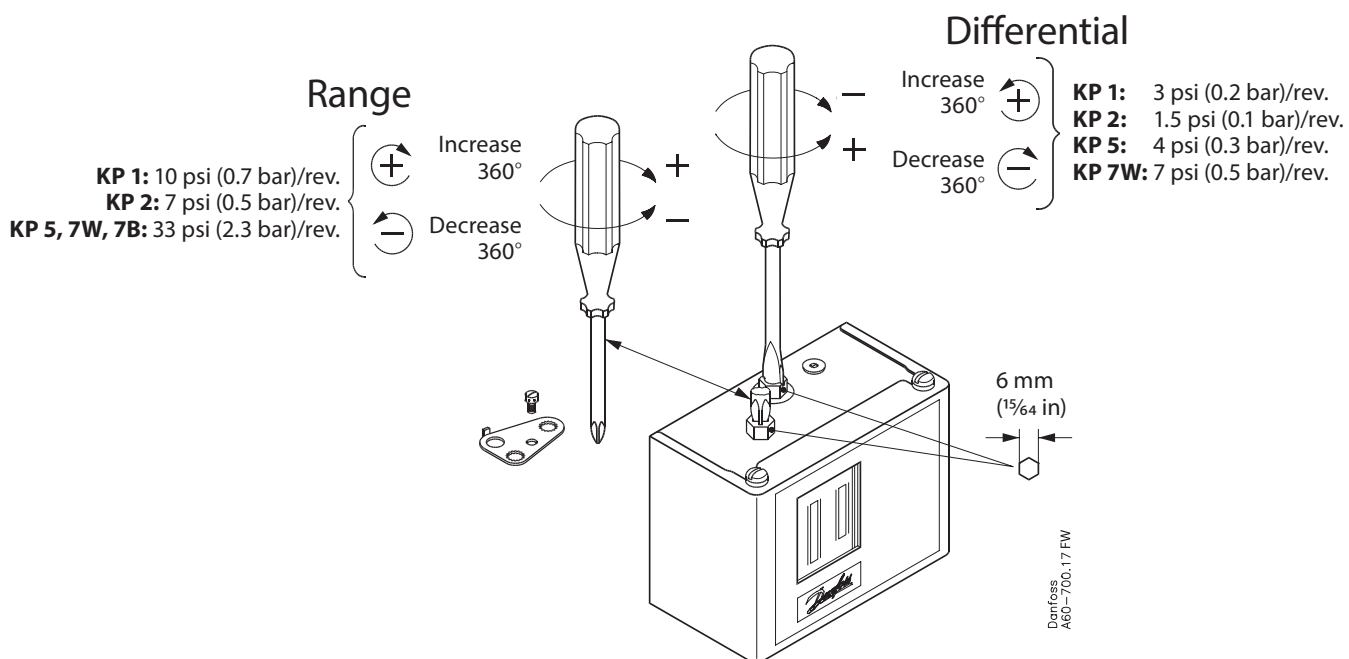
$$\begin{array}{rcl} \text{LSP} & + & \text{DIFF.} & = & \text{HSP} \\ 12 \text{ psig} & + & 10 \text{ psi} & = & 22 \text{ psig} \\ (0.8 \text{ bar}) & & (0.7 \text{ bar}) & & (1.5 \text{ bar}) \end{array}$$

If terminals 1-4 are used: CUT-IN = HSP  
CUT-OUT = LSP

If terminals 1-2 are used: CUT-IN = LSP  
CUT-OUT = HSP

### Adjustment

See instruction printed on top of control



#### Note:

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