

Installation Guide

Pressure Control

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

060R9746

Refrigerants

HCFC and non-flammable HFC

CAUTION:
Do not install these controls on ammonia systems.

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

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

Mounting requirements

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

Ambient temperatures

t_1 min. KP 1, KP 2, KP 5:	-40 °F (-40 °C)
t_1 min. KP 7:	-13 °F (-25 °C)
t_1 max.:	149 °F (65 °C)

Mounting

Test pressure (P_{test})

$P_{test} max.$:	
KP 1, KP 2:	285 psig (20 bar p_e)
KP 5, KP 7:	510 psig (35 bar p_e)
KP 7:	174 psig (12 bar p_e)

Connections

$\text{Hex} = 1\frac{5}{32}$ in. (12mm)
 $\frac{1}{4}$ in. SAE flare
 Cable entry $\frac{1}{2}$ in. int. thread accepts $\frac{1}{2}$ in. NPT or NPT
 $\text{O} = \frac{5}{16}$ in. (16mm)
 $\frac{1}{4}$ in. SAE flare nut

Enclosure

A: 10 – 32 UNC Threads
B: Enclosure: ~NEMA 1
 max. $\frac{1}{8}$ in. (3 mm)

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

060R9746



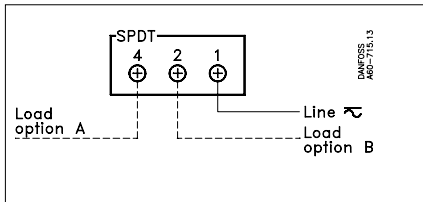
CAUTION:

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:

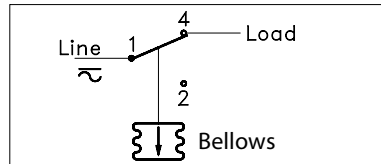
Use terminal screws furnished in the contact block. Use tightening torque 20 lb. in (2.3 Nm). Use copper wire only.

Contact load ratings

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

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:

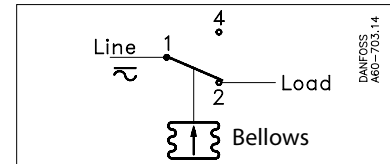
CUT-IN = 30 psig
 CUT-OUT = 10 psig
 This means :
 CUT-IN = HSP = 30 psig
 CUT-OUT = LSP = 10 psig

Note:

Bellows movement on pressure rise

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:

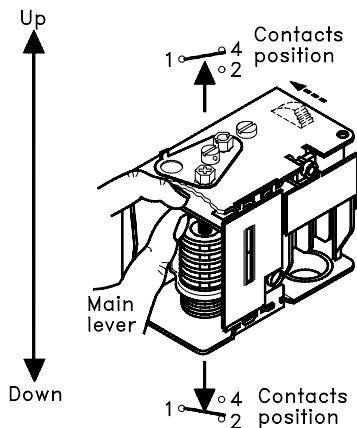
CUT-IN = 250 psig
 CUT-OUT = 350 psig
 This means :
 CUT-IN = LSP = 250 psig
 CUT-OUT = HSP = 350 psig

Bellows movement on pressure drop

The free terminal can be used for signal purpose.

Manual trip function

(Electrical contacts / wiring test)

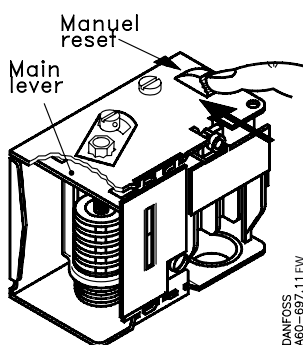


TRIP (main lever) use FINGERS ONLY! (Do NOT use screwdriver)

Note:

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

Manual reset



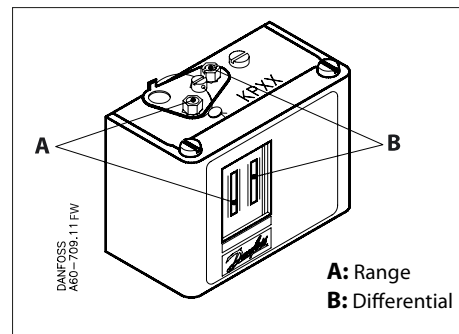
To resume control operation after safety cutout, push reset knob as indicated.

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)

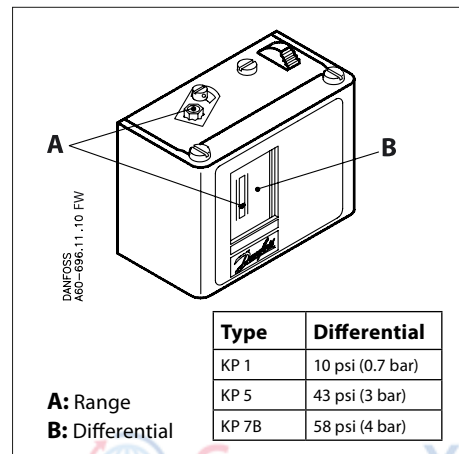
Adjustment spindle(s) location

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



A: Range
B: Differential

Manual reset KP 1, KP 5, KP 7B



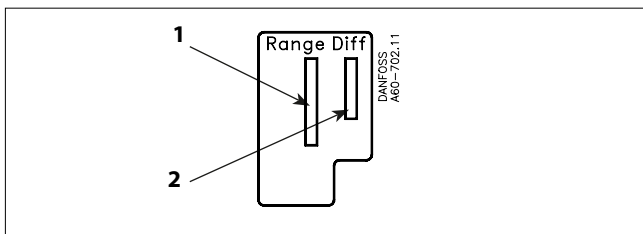
A: Range
B: Differential

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

Setting

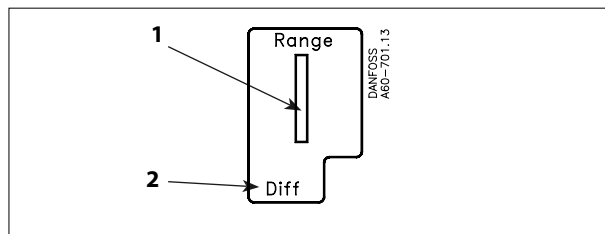
(see also "Wiring")

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.)

KP 1 (manual reset ONLY)



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

Note:

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

HIGH SET POINT minus DIFFERENTIAL equals LOW SET POINT

Example:

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

LOW SET POINT plus DIFFERENTIAL equals HIGH SET POINT

Example:

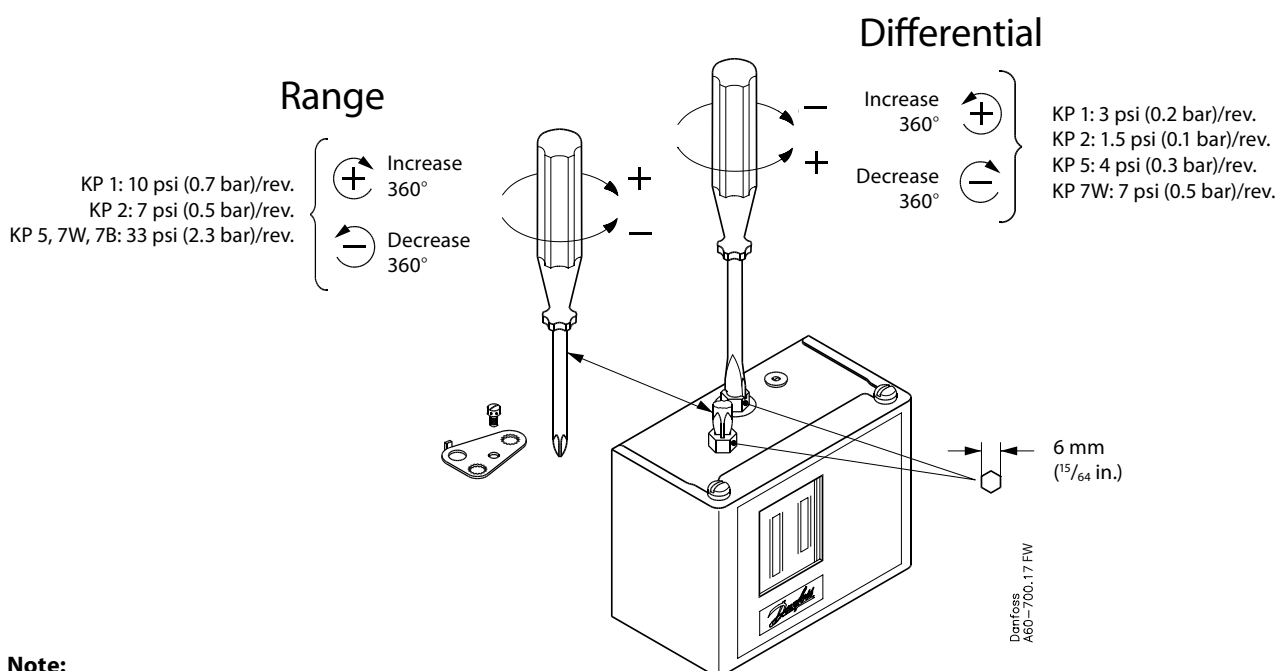
$$\begin{array}{rcl} \text{LSP} & + & \text{DIFF.} = \text{HSP} \\ 12 \text{ psig} & + & 10 \text{ psi} = 22 \text{ psig} \\ (0.8 \text{ bar}) & & (0.7 \text{ bar}) \quad (1.5 \text{ bar}) \end{array}$$

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).