

*Danfoss*

**KP 1 Pressure Switch**



## Danfoss KP 1 Pressure Switch Installation Guide

[Home](#) » [Danfoss](#) » Danfoss KP 1 Pressure Switch Installation Guide 

### Contents

- 1 Danfoss KP 1 Pressure Switch
- 2 Pressure switch
- 3 Refrigerants
- 4 Ambient temperatures
- 5 Connections
- 6 Mounting
- 7 Manual trip function
- 8 Adjustment
- 9 Electrical rating
- 10 Safety requirements
- 11 Disclaimer
- 12 Documents / Resources
  - 12.1 References

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**Danfoss KP 1 Pressure Switch**



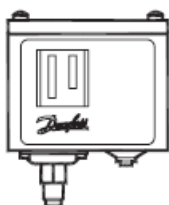
## Pressure switch

- KP 1, KP 1W, KP 1A, KP 2, KP 4, KP 5, KP 5A, KP 6W, KP 6B, KP 6S, KP 6AW, KP 6AB, KP 6AS, KP 7W, KP 7B, KP 7S

## Refrigerants

- R22, R134a, R404A, R407A, R407C, R407F, R410A\*) R422B, R422D, R448A, R449A, R452A, R507A, R513A, R717\*\*)
- For a complete list of approved refrigerants, go to <http://products.danfoss.com/all-products/>
- only for KP 6W, KP 6B, KP 6S, KP 6AW, KP 6AB, KP 6AS
- only for KP 1A, KP 5A, KP 6AW, KP 6AB, KP 6AS

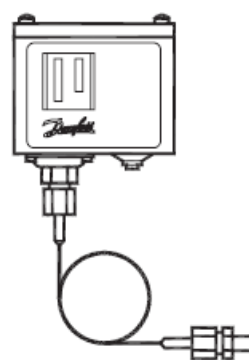
KP 1, KP 2, KP4  
KP 5, KP 6, KP 7



KP 1, KP 2, KP4  
KP 5, KP 6, KP 7



KP 1A, KP 5A

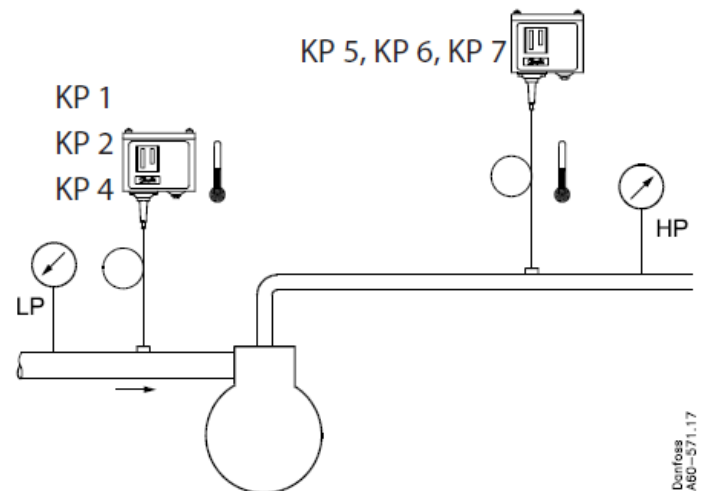
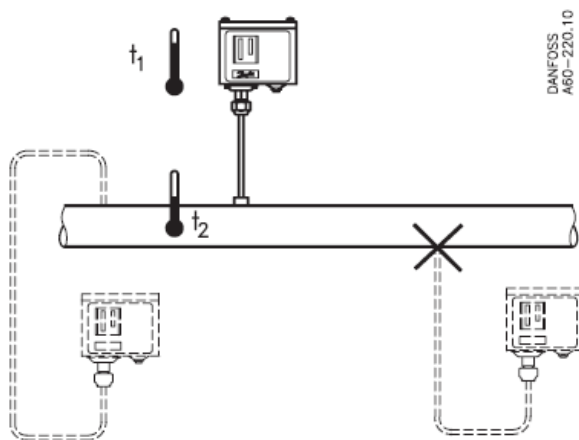


## Ambient temperatures

### Ambient temperatures / Mounting requirements

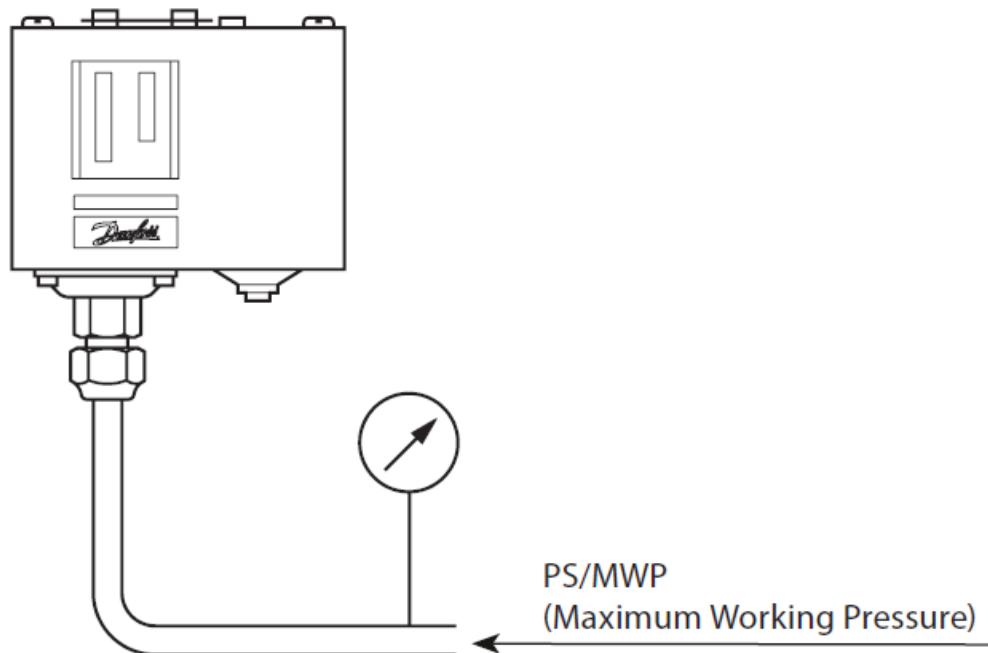
-40 – 65 °C

-25 – 65 °C (PED approved units)



- Relative humidity RH: 30 – 98%
- Vibration resistance: 4 g (10 – 1000 Hz)

### Test pressure (Ptest) PS/MWP



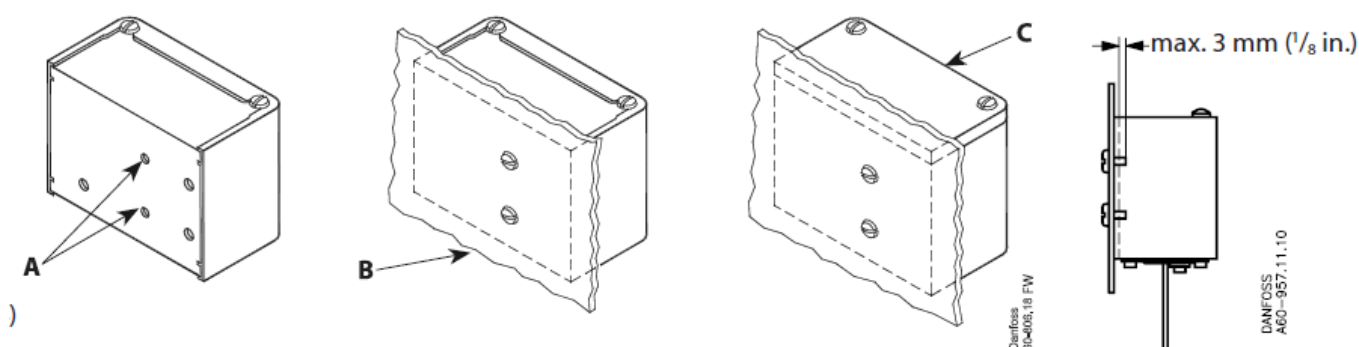
### Ptestmax.:

- KP 1, KP 2: 20 bar pe (285 psig)
- KP 2: 12 bar pe (174 psig)
- KP 4: 24 bar pe (343 psig)
- KP 5, KP 7: 35 bar pe (510 psig)
- KP 6: 46,5 bar pe (675 psig)

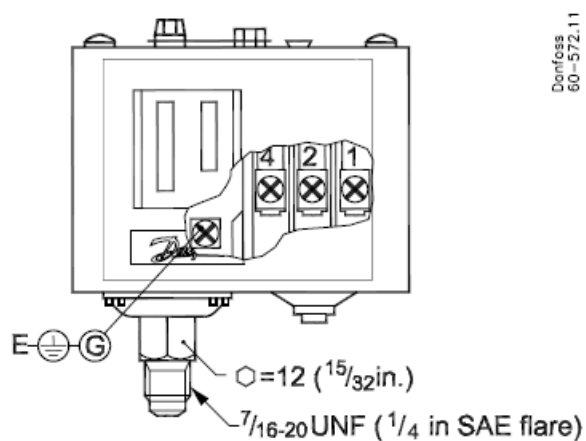
Type	Regulation range	PS/MWP
KP 1	-0.2 – 7.5 bar	245 psig / 17 bar
KP 1, reset	-0.9 – 7.0 bar	245 psig / 17 bar
KP 1 W	0.5 – 3.0 bar	245 psig / 17 bar
KP 2	-0.2 – 5.0 bar	245 psig / 17 bar
KP 2	-0.2 – 3.5 bar	145 psig / 10 bar
KP 4	-0.2 – 7.5 bar	312 psig / 21,5 bar
KP 5	8 – 32 bar	510 psig / 35 bar
KP 6	8 – 42 bar	675 psig / 46,5 bar
KP 7	8 – 32 bar	510 psig / 35 bar

## Enclosure

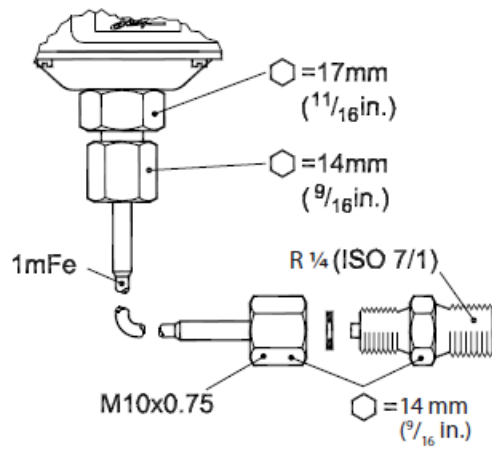
- **A:** 8 – 32 UNC (M4)
- **B:** Enclosure IP30 (EN 60529)
- **C:** Enclosure IP44 (EN 60529)



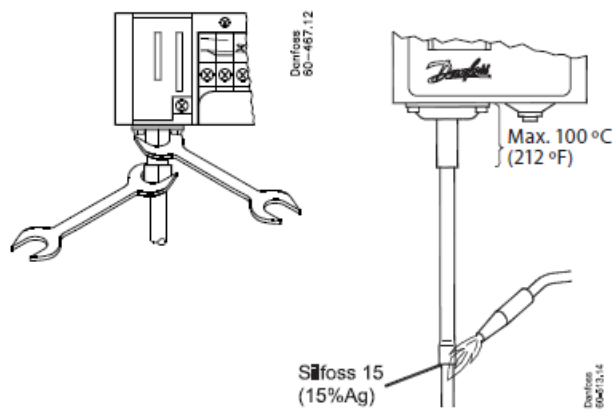
## Connections



## Connections for KP 1A, KP 5A, KP 6AS



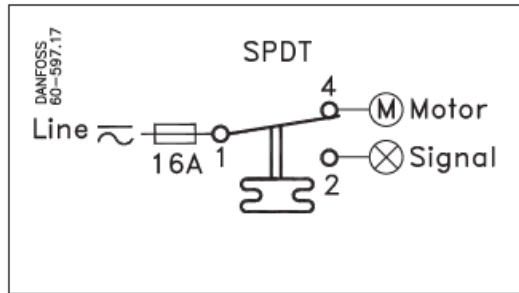
## Mounting



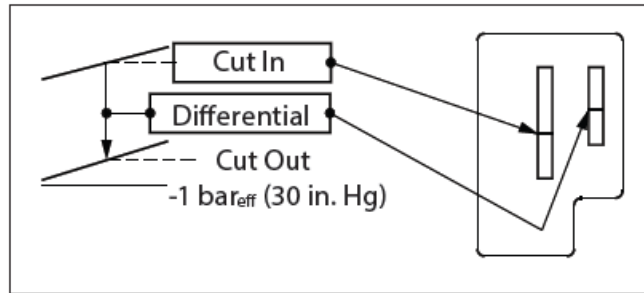
## CAUTION

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

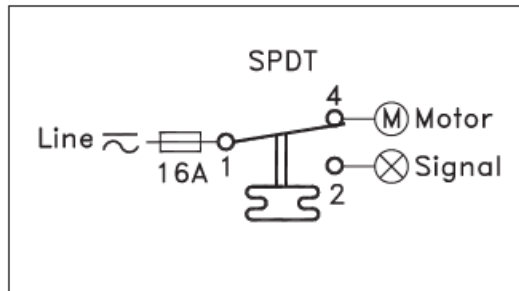
Contact 1-4 opens on pressure drop



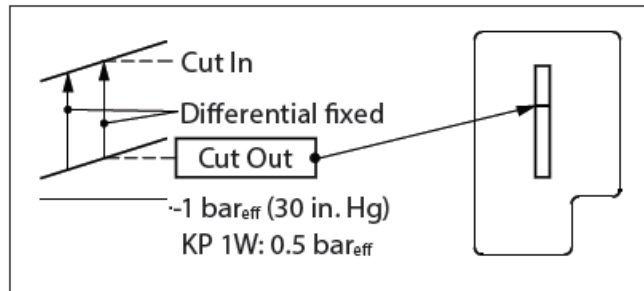
KP 1, KP 2, KP 4



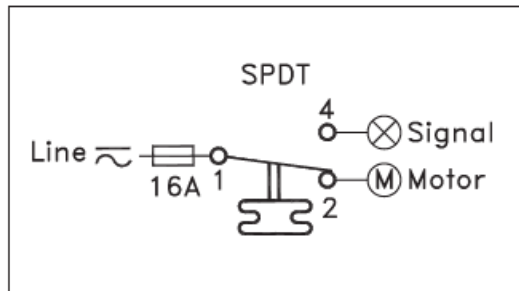
Contact 1-4 opens on pressure drop



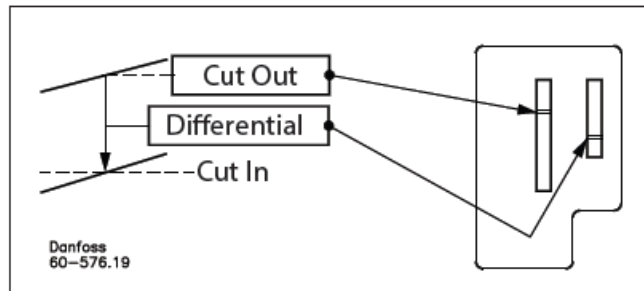
KP 1W, KP 1 manual reset



Contact 1-2 opens on pressure rise




KP 5, KP 5A, KP 6, KP 6A, KP 7



- Short circuit protection: Fuse 16 Amp.

AC 1: 16 A	400 V a.c.	DC 13 12 W 220 V
AC 3: 16 A		
AC 15: 10 A		

When used acc. to UL regulations

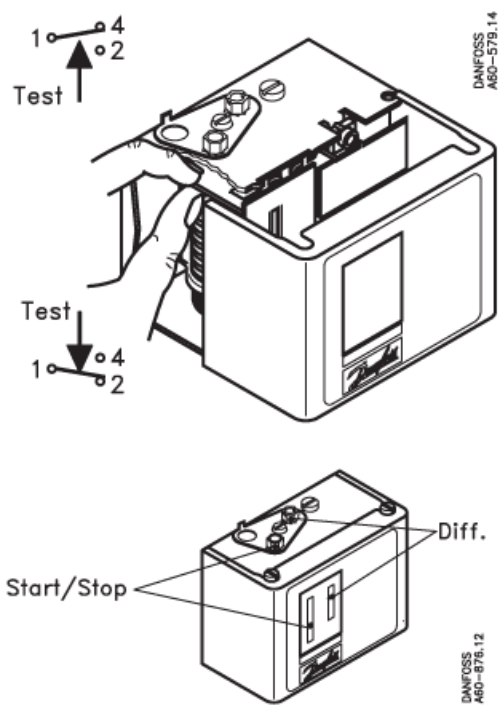
-  Listed refrigeration controller 61B5

Voltage		FL	LR	Resist. load	Pilot duty
AC	DC	A	A		
240	—	8	48	8 A	3A
120	—	16	96	16 A	
—	240	—	—	—	12 W

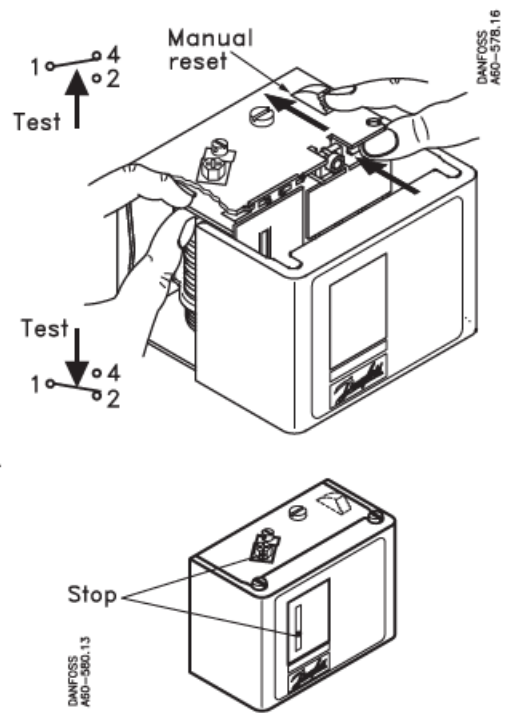
- Use copper wire only Tightening torque 20 lb. in.

### Manual trip function

#### Automatic reset



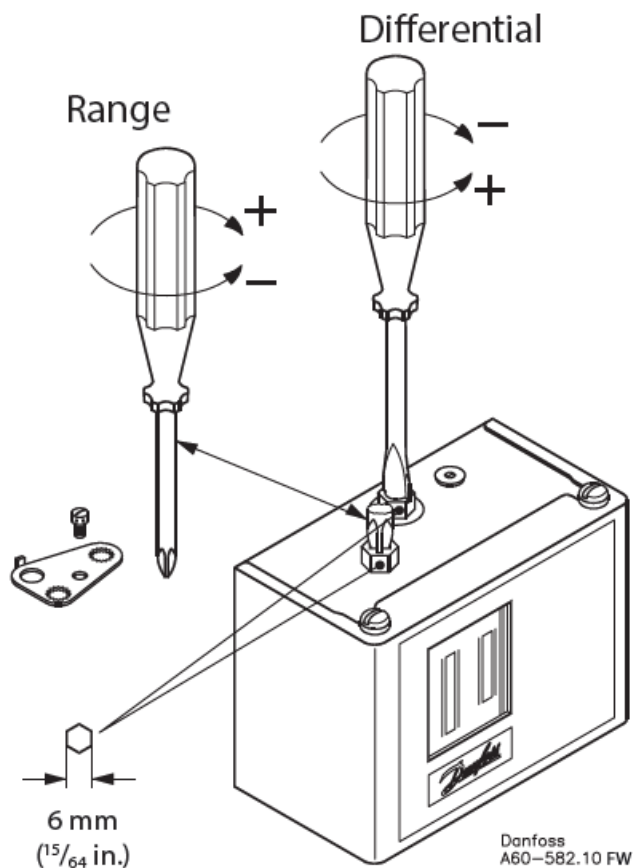
#### Manual reset



Type	Differential
KP 1, KP 1A	0.7 bar (10 psi)
KP 5, KP 5A	3 bar (43 psi)
KP 6B, KP 6S, KP 6AB, KP 6AS, KP 7B, KP 7S	4 bar (58 psi)

## Adjustment





### CAUTION

Only for selected A2L refrigerants: R455A, R454C, R1234yf, R1234yz, R1234ze

For a complete list of approved A2L refrigerants, go to <http://products.danfoss.com/all-products/>

### Electrical rating

- AC-3: 16 A / 250 V AC
- AC-15: 10 A / 250 V AC

Voltage	Current Range	Power factor (cos phi)	Frequency
250V AC	$\leq 4.0$ A	PF $\geq 0,400$	50Hz/60Hz
250V AC	> 4.0 to 6.0 A	PF $\geq 0,594$	50Hz/60Hz
250V AC	> 6.0 to 16,0 A	PF $\geq 0,780$	50Hz/60Hz

### IMPORTANT NOTICE

#### Safety requirements

1. KP pressure switches shall only be employed in the units/systems that comply with the requirements for charge limits and requirements for avoiding ignition sources of IEC 60335-2-24, IEC 60335-2-40, IEC 60335-2-89, ISO 5149, EN378-1 or equivalent.
2. Applying the overload on the KPs must be prevented. If by any chance it was damaged, the system/unit shall be stopped and KP shall be replaced as necessary.

3. Electrostatic discharge protection and Electrical leakage protection shall be surely implemented by grounding or other measures.
4. Only trained personnel are authorized to handle flammable refrigerant systems and may do the installation, maintenance, and exchange of the switch by using appropriate tools.
5. It is recommended to regularly check the function of the KP switch.
6. KP pressure switches must be installed in an area with a low risk of mechanical damage.
7. Corrosion protection of KP pressure switches must be taken into account when used in a corrosive environment.
8. Cables shall not be in contact with sharp edges. The cables shall be connected with adequate stress relief to prevent pulling forces can be carried through the cable to the terminal.
9. In the event of pressure pulsation in the system, where the switch is connected, these must be effectively dumped to prevent failure of the bellows. The cycle frequency of the KP switch shall be kept as low as possible.
10. The KP switches shall not be installed in places where a high level of vibration is present.

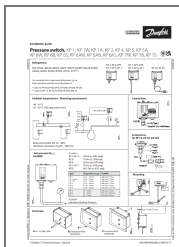
## Disclaimer

The user is responsible for ensuring that third parties also comply with this Notice, e.g. in case the KP switches are supplied to third parties, and e.g. that all installation guides are available with the KP switches during installation. It is required that all conditions of this guide are met and secured when using KP pressure switches.

Danfoss shall not be responsible for any kind of direct and indirect or consequential damage or loss, including, but not limited to, loss of property, production, loss of property, or human injury arising out of the explosion or fire caused by the flammable nature of refrigerant.

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## Documents / Resources



[Danfoss KP 1 Pressure Switch](#) [pdf] Installation Guide  
KP 1, KP 1 Pressure Switch, Pressure Switch, Switch

## References

- [User Manual](#)

[Manuals+.](#) [Privacy Policy](#)

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