

## Series P74

### Differential Pressure Controls, without time delay

#### Introduction

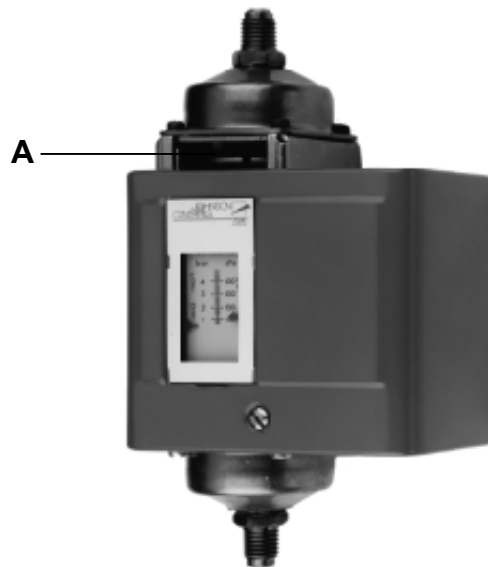
*These controls are designed to sense pressure differences between two points and may be used as operating or limit controls. Typical applications are to detect flow across a chiller or water cooled condenser, to detect flow in a heating system and sensing lube oil pressure differential on refrigeration compressors.*

#### Description

The P74 series of differential pressure switches incorporate two opposing pressure elements and an adjustable range setpoint spring with a calibrated scale. The control switches at the indicated setpoint on an increase in differential pressure and switches back to the normal position when the differential pressure decreases to the setpoint less the mechanical switching differential.

#### Note

These controls are designed for use only as operating controls. Where an operating control failure would result in personal injury or loss of property it is the responsibility of the installer to add devices or systems that protect against, or warn of, control failure.



P74 Differential Pressure Control

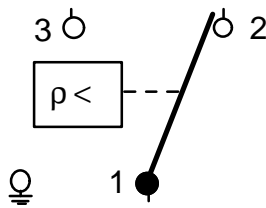
#### Adjustment

The setpoint can be adjusted by the notched cam **A** (see photo) located on the top of the control. The switching differential can be adjusted by turning a hexagonal nut on the differential adjusting screw located inside the control cover (adjustable differential models only).

#### Feature and Benefits

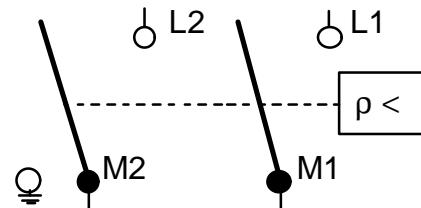
- |  |                                    |
|--|------------------------------------|
| <input type="checkbox"/> <b>Heavy duty pressure elements.</b>  | Withstands high overrun pressures. |
| <input type="checkbox"/> <b>These controls may be used in combination with series P28 lube oil protection control on two compressor, single motor units.</b> | Reduces the lube oil system cost.  |

## Contact function



**Fig. 1a**  
**Type P74EA and P74FA**

1 - 2 closes on increase of differential pressure.  
1 - 3 opens simultaneously.



**Fig. 1b**  
**Type P74DA**

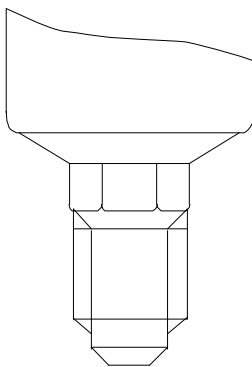
Contacts close on increase of differential pressure.

## Repair and replacement

Power elements may be replaced in the field. Other repairs are not possible. In case of an improperly functioning control, please check with your nearest supplier.

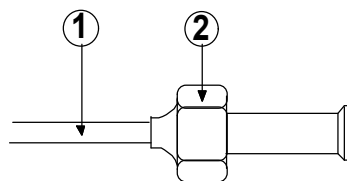
When contacting the supplier for a replacement you should state the type/model number of the control. This number can be found on the data plate or cover label.

## Pressure connections



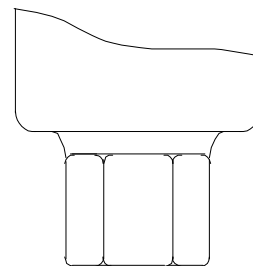
**Fig. 2**  
**Style 5**

1.  $\frac{7}{16}$ "-20 UNF male for  $\frac{1}{4}$ " SAE flare tube



**Fig. 3**  
**Style 13**

1. 90 cm capillary
2.  $\frac{7}{16}$ "-20 UNF nut for  $\frac{1}{4}$ " SAE flare tube



**Fig. 4**  
**Style 15**

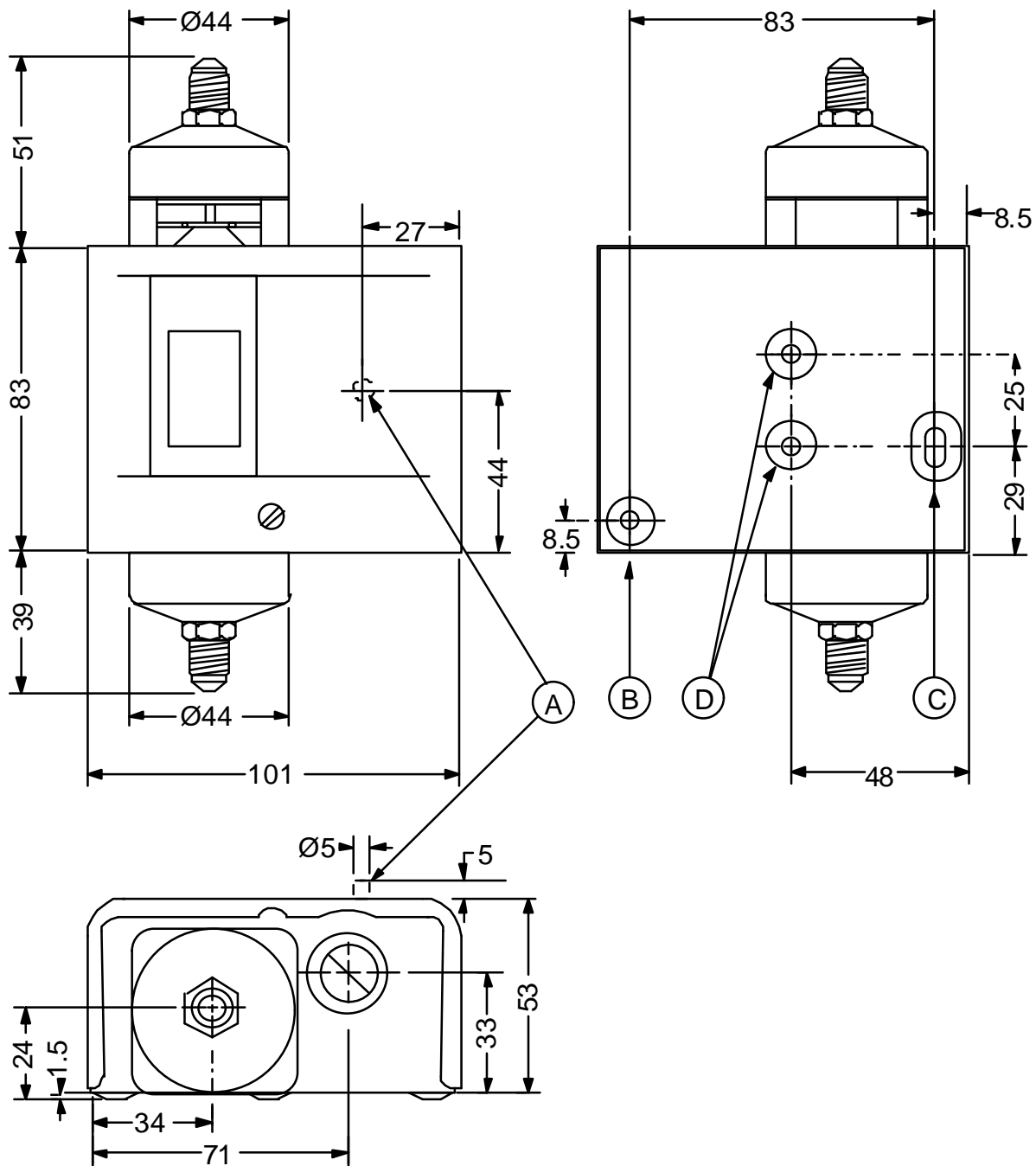
1.  $\frac{1}{4}$ "-18 NPT female

## Type number selection table

Order number	P74DA-9300	P74DA-9600	P74EA-9300	P74EA-9600
Range $\Delta P$ (bar)	0.6/4.8	0.6/4.8	0.6/4.8	0.6/4.8
Switching differential (bar)	0.7/2 adj.	0.7/2 adj.	0.3 fix.	0.3 fix.
Medium	Non-corrosive Refrigerant	Non-corrosive Refrigerant	Non-corrosive Refrigerant	Non-corrosive Refrigerant
Pressure connector (style)	5	13	5	13
Electrical rating	15(10) A 230 V ac	15(10) A 230 V ac	15(8) A 230 V ac	15(8) A 230 V ac
Contact function	fig. 1b	fig. 1b	fig. 1a	fig. 1a
Maximum bellows pressure absolute (bar)	23	23	23	23
Maximum allowable diff. in pressure between the bellows (bar)	14	14	14	14
Pressure element material	stainless steel/copper	stainless steel/copper	stainless steel/copper	stainless steel/copper

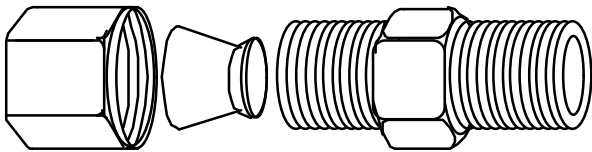
Order number	P74EA-9700	P74FA-9700	P74FA-9701	
Range $\Delta P$ (bar)	0.6/4.8	0/1	2.0/8.0	
Switching differential (bar)	0.3 fix.	0.1 fix.	0.7 fix.	
Medium	Ammonia or Non-corrosive Refrigerant	Water	Ammonia or Non-corrosive Refrigerant	
Pressure connector (style)	15	15	15	
Electrical rating	15(8) A 230 V ac	15(3) A 230 V ac	15(3) A 230 V ac	
Contact function	fig. 1a	fig. 1a	fig. 1a	
Maximum bellows pressure absolute (bar)	23	10	23	
Maximum allowable diff. in pressure between the bellows (bar)	14	7	14	
Pressure element material	stainless steel	tombac/ brass	stainless steel	

Note: 1 bar = 100 kPa  $\approx$  14.5 psi

**D**imensions (mm)**Fig. 5**

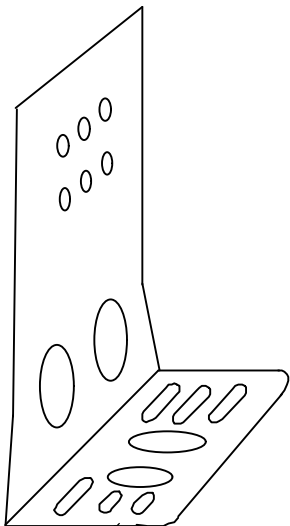
- A** = Reset button  
**B** = Mounting hole, Ø 5 mm  
**C** = Mounting slot  
**D** = 10 - 32 UNF2B

**A**ccessories (optional)

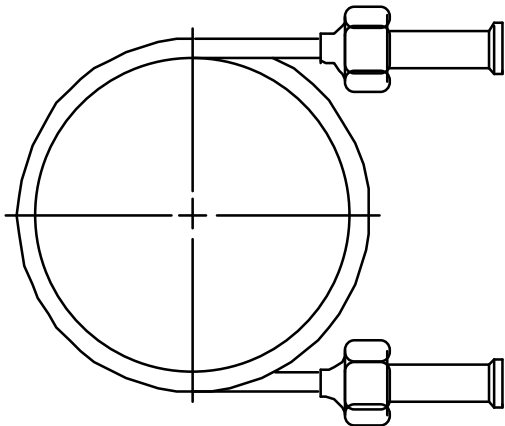


**Fig. 6**  
**Compression Coupling**

Description	Application	Order number
Fits into style 15 pressure connectors	For 6 mm copper or steel tubing	<b>CNR003N001R</b>
	For 8 mm copper or steel tubing	<b>CNR003N002R</b>



**Fig. 7**  
Mounting bracket  
Order number **271-51**



**Fig. 8**  
90 cm Capillary with (2) flare nuts (1/4" SAE)  
Order number **SEC002N600**

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# **N**otes

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## **N**otes

## Specifications

<b>Types, ranges differentials</b>	See type number selection table	
<b>Media</b>	Ammonia (for special models), non-corrosive refrigerant or water	
<b>Pressure connections</b>	See type number selection	
<b>Maximum overrun pressure</b>	See type number selection	
<b>Ambient temperature limits</b>	-30/+55 °C	
<b>Material</b>	<b>case</b>	Cold-rolled steel, zinc plated
	<b>cover</b>	Cold-rolled steel, painted
	<b>pressure element</b>	See type number selection
<b>Protection</b>	IP30	
<b>Electrical rating</b>	See type number selection	
<b>Shipping weights</b>	<b>ind. pack</b>	1.2 kg
	<b>overpack</b>	12 kg (10 pcs.)
<b>Accessories (order separately)</b>	Mounting bracket, Compression coupling, 90 cm capillary with two flare nuts. (For code numbers see page 5.)	
<b>Dimensions</b>	See dimension drawing.	

*The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult the local Johnson Controls office or representative. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.*



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Printed in Europe