

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

Contact function

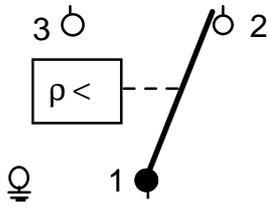


Fig. 1a
Type P74EA and P74FA

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

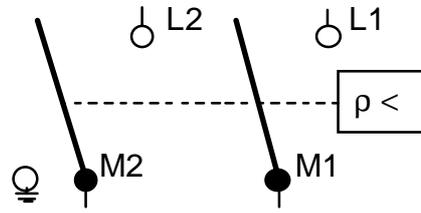


Fig. 1b
Type P74DA

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

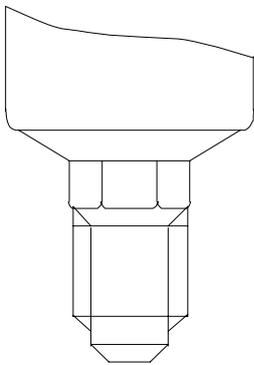


Fig.2
Style 5

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

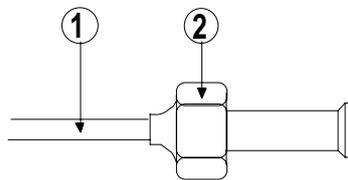


Fig.3
Style 13

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

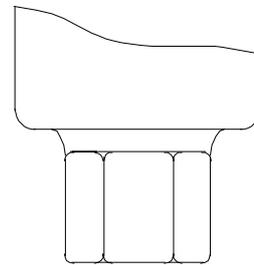


Fig.4
Style 15

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

Type number selection table

Order number	P74DA-9300	P74DA-9600	P74EA-9300	P74EA-9600
Range ΔP (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 ΔP (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

Dimensions (mm)

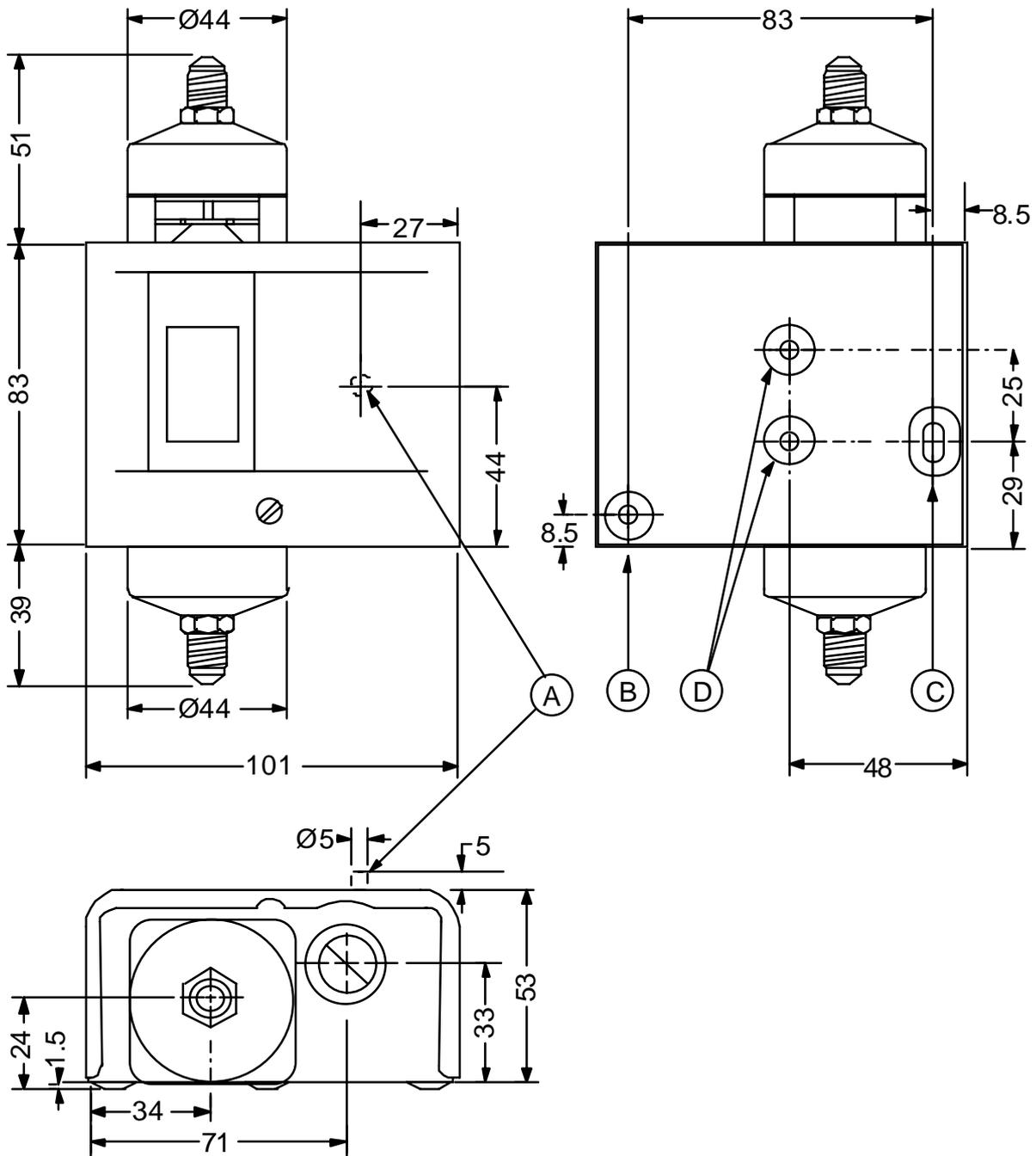


Fig. 5

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

Accessories (optional)

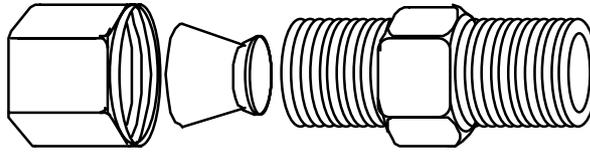


Fig. 6
Compression Coupling

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

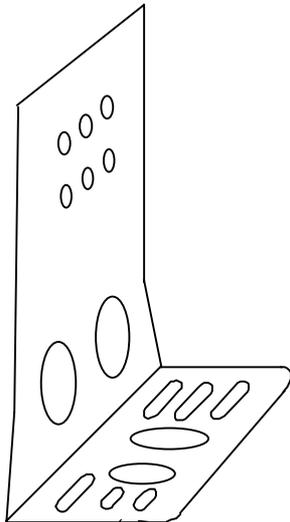


Fig. 7
Mounting bracket
Order number **271-51**

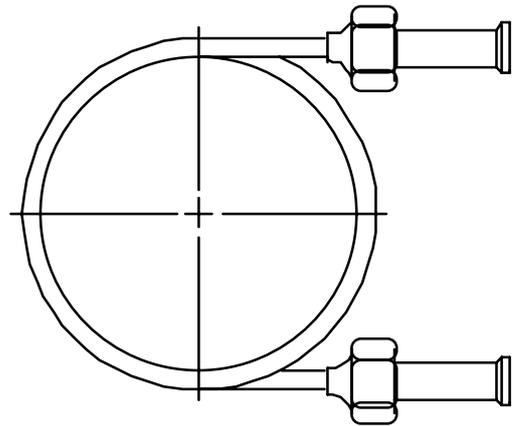


Fig. 8
90 cm Capillary with (2) flare nuts (1/4" SAE)
Order number **SEC002N600**

Notes

Notes

Specifications

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

**JOHNSON
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