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Series P736

Dual Pressure Controls for Refrigeration, Air-conditioning and Heatpump Applications

Introduction

These dual pressure controls are designed for use in a variety of applications involving refrigeration high or low pressure. Models supplied have a "whole range" design, enabling them to be used all non-corrosive refrigerants which are within the operating range of the control. They may also be used for other high or low pressure applications such as air, water etc. Models which can be used with ammonia are included in the program. Also models tested and approved according to PED 97/23EC Cat. IV are included in the program.



P736 Dual Pressure Control for Refrigeration

Description

The P736 series pressure controls may be used for control functions or limit functions, depending on model number. All models are provided with alarm contacts (except P736ALA). All standard models have phosphor bronze bellows and brass pressure connections. Models for use with ammonia are provided with stainless steel bellows and connectors. Devices conforming PED 97/23EC have a double bellows on the high pressure versions (HP side)

Feature and Benefits	
<input type="checkbox"/> Generous wiring space	Easy wiring and maintenance
<input type="checkbox"/> Trip-free manual reset	Override is not possible in the control function
<input type="checkbox"/> Separate alarm contacts for both low pressure and high pressure cut-out (except P736ALA)	Easy monitoring of the fault location

Note

The controls are intended to control equipment under normal operating conditions. Where failure or malfunctioning of the controls could lead to an abnormal operating condition that could cause personal injury or damage to the equipment or other property, other devices (limit or safety controls) or systems (alarm or supervisory systems) intended to warn of or protect against failure or malfunctioning of the controls must be incorporated into and maintained as part of the control system.

Type number matrix

- P736LCA Automatic reset both sides
- P736MCA Automatic reset low side manual reset high side
- P736PGA Manual reset both side
- P736LCW Automatic reset both sides
Conforming PED 97/23CE
- P736MCB Aut. res. LP side, Man. res. HP limit
Conforming PED 97/23CE
- P736MCS Aut. res. LP side, Man. res. HP safety limit. Conforming PED 97/23CE
- P736PGB Manual reset both sides
Conforming PED 97/23CE
- P736ALA Dual fan cycling control (2 x SPST close high)

Adjustment

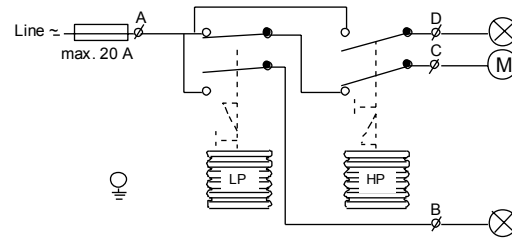
On most models the range scale indicates the high switch point (exception: LP side of P736PGA, P736PGB, here the range scale indicates the low switching point). To obtain low switch point deduct differential value from the high switch point.

Repair and replacement

Repair is 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.

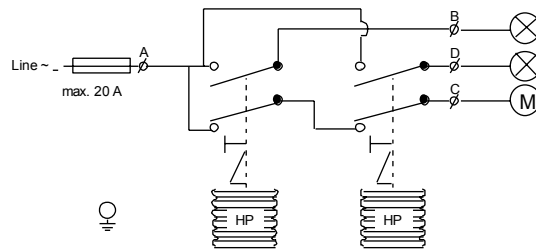
Contact functions

(see also "Type Number Selection" table)



- LP.** A - C opens on pressure decrease
A - B closes simultaneously
- HP.** A - C opens on pressure increase
A - D closes simultaneously

Fig. 1



- Left side HP.** A - C opens on pressure increase
A - B closes simultaneously
- Right side HP.** A - C opens on pressure increase
A - D closes simultaneously

Fig. 2

Switching action P736ALA

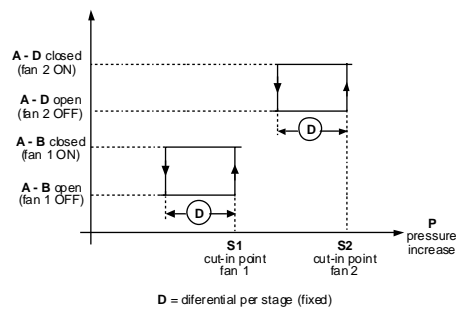


Fig.3a

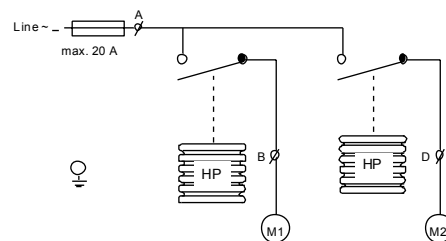


Fig. 3b

Type number selection table

Dual pressure controls for Non-corrosive refrigerants. LP Pmax.: 22bar HP Pmax.:33 bar

FamilyCode	PressureConnection				LeftSide		RightSide		Contact function (Figure)	Construction
	Style5			Style30	Range (bar)	Diff. (bar)	Range (bar)	Diff. (bar)		
	Ind. Pack.		Bulk-pack	Ind. Pack.						
P736LCA	-9300		-9320	-9400	-0.5 to 7	0.6 to 3	3 to 30	3 (fixed)	1	LP/HP
P736MCA	-9300		-9320	-9400	-0.5 to 7	0.6 to 3	3 to 30	Man. res.**	1	

Dual pressure controls for Ammonia and Non-corrosive refrigerants, LP Pmax.: 20 bar HP Pmax.:33 bar

FamilyCode	PressureConnection			LeftSide		RightSide		Contact function (Figure)	Construction
	Style15			Range (bar)	Diff. (bar)	Range (bar)	Diff. (bar)		
	Ind.Pack.	Bulk-pack							
P736LCA	-9700	****		-0.5 to 7	0.6 to 3	3 to 30	3 (fixed)	1	LP/HP
P736MCA	-9700	****		-0.5 to 7	0.6 to 3	3 to 30	Man. res.**	1	
P736PGA	-9700	****		-0.5 to 7	Man. res.*	3 to 30	Man. res.**	1	

Dual pressure Fan cycling controls for Air-cooled condensers (Non-corrosive refrigerants) HP Pmax.: 30 bar

FamilyCode	PressureConnection			LeftSide		RightSide		Contact function (Figure)	Construction
	Style5		Style30	Range (bar)	Diff. (bar)	Range (bar)	Diff. (bar)		
	Ind.Pack.	Bulk-pack	Ind. Pack.						
P736ALA	-9351	****	-9451	3.5 to 21	1.8 (fixed)	3.5 to 21	1.8 (fixed)	3	HP/HP

Dual pressure controls for Non-corrosive refrigerants. LP Pmax.: 20 bar HP Pmax.:33 bar (Including lock plate assembly)

FamilyCode	PressureConnection				LeftSide		RightSide		Contact function (Figure)	Approved according to PED 97/23CE Cat. IV
	Style5			Style28	Range (bar)	Diff. (bar)	Range (bar)	Diff. (bar)		
	Ind. Pack.		Bulk-pack	Ind. Pack.						
P736LCW	-9300		-9320	-9800	-0.5 to 7	0.6 to 3	3 to 30	3 (fixed)	1	Yes
P736MCB	-9300		****	-9800	-0.5 to 7	0.6 to 3	3 to 30	Man. res.**	1	Yes
P736MCS	-9300		****		-0.5 to 7	0.6 to 3	3 to 30	Man. res.**	1	Yes
P736PGB	-9300		****	-9800	-0.5 to 7	Man. res.*	3 to 30	Man. res.**	1	Yes

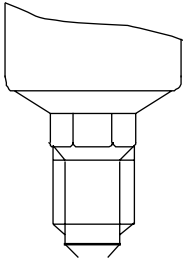
Dual pressure Manual reset HP/HP, TÜV-Bergrenzer + Sicherheitsbegrenzer

FamilyCode	PressureConnection			LeftSide		RightSide		Contact function (Figure)	Construction	Approved according to PED 97/23CE Cat. IV
	Style5		Style30	Range (bar)	Diff. (bar)	Range (bar)	Diff. (bar)			
	Ind. Pack.	Bulk-pack	Ind. Pack.							
P736PLM		-9370		3 to 30	Man. res.*	3 to 30	Man. res.**	2	HP/HP	

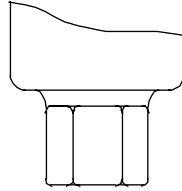
- **** Can be set-up for quantity orders
- ** Resetable at 3 bar below cut-out point
- * Resetable at 0.5 bar above cut-out point

Note: 100 kPa = 1 bar ≈ 14.5 psi

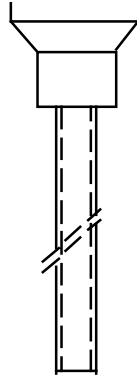
Pressure connections



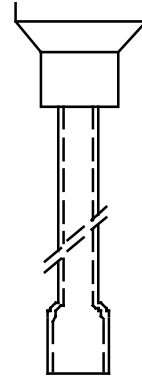
**Fig. 4
Style 5**
Male connector
7/16"-20 UNF for 1/4"
6 mm flare nut.



**Fig. 5
Style 15**
Female connector
1/4"-18 NPT



**Fig. 6
Style 28**
Braze connection
6 mm ODM



**Fig. 7
Style 30**
Braze connection
1/4" ODF

Accessories (optional)

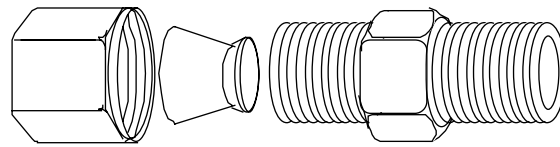


Fig. 8

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

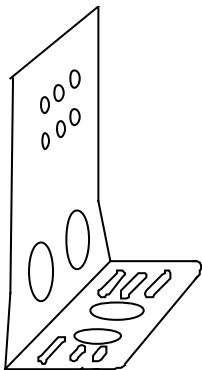


Fig. 9
Mounting bracket
Order number 271-51L

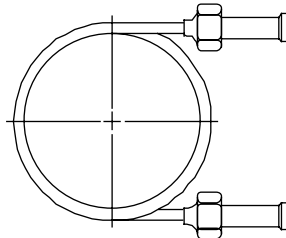


Fig. 10
90 cm Capillary with (2) flare
nuts (1/4" SAE)
Order number **SEC002N600**

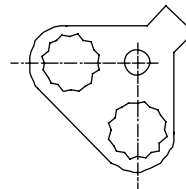


Fig. 11
Locking kit
Order number
KIT023N600

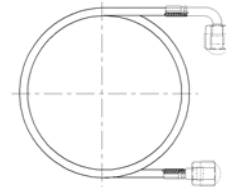
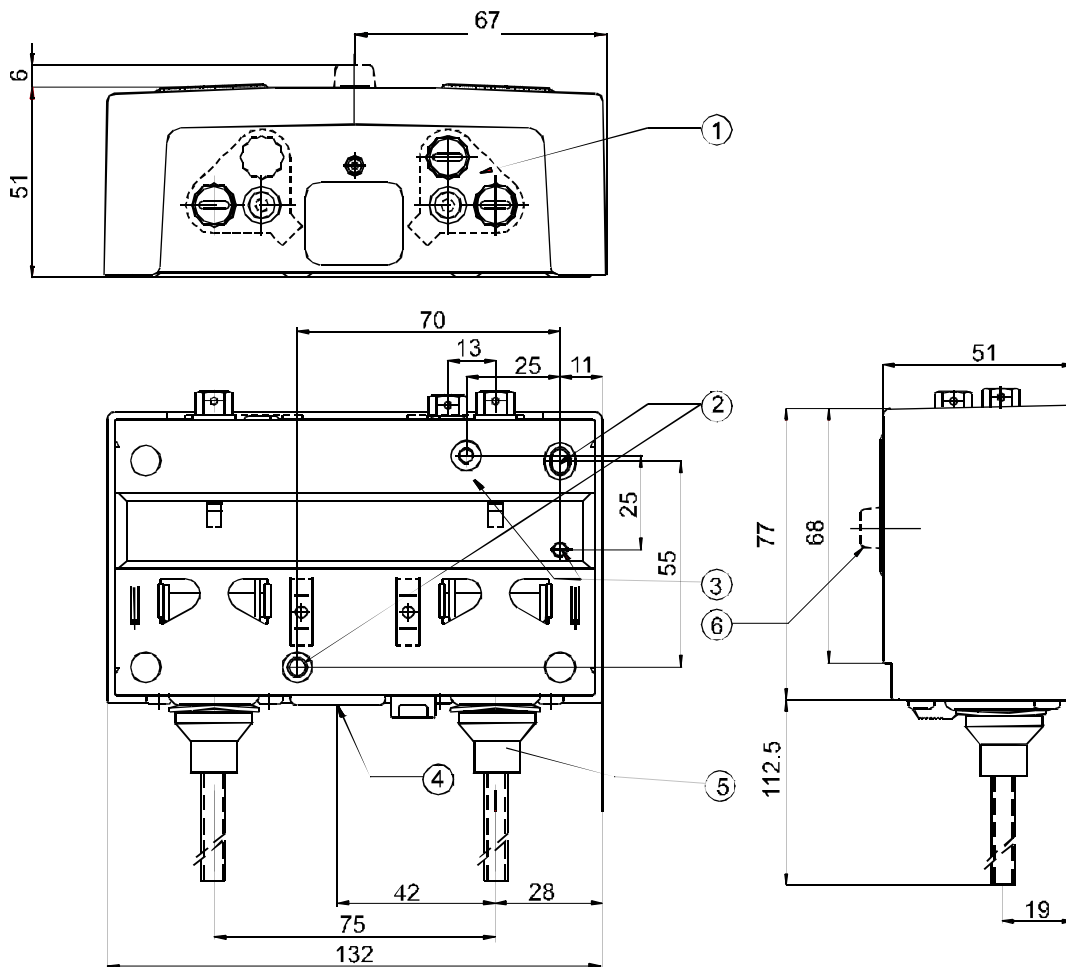


Fig. 12
90 cm Flexible synthetic
refrigeration hose with (2)
flare nuts (1/4" SAE)
Order number
H735AA-90D

Dimensions (mm)



1. lock plate (if applied)
2. two mounting holes $\text{\O} 4.5 \text{ mm}$
3. two mounting holes $\text{\O} \text{M4}$ (back side)
4. cable inlet grommet (cable range to $\text{\O} 16 \text{ mm}$)
5. power element:
Style 28: Braze connection 6 mm ODM (shown)
Style 30: Braze connection 1/4" ODF
6. reset button (on manual reset models only)

Fig. 13

Notes

Specifications

Pressure connections	Style 5, 15, 28, 30 (see drawings)		
Operating ranges and diff.	See type number selection		
Adjustments	See type number selection		
Ambient temp. limit	-50 to +55 °C (+70 °C max. duration two hours) -20 to 55°C for PED approved models		
Electrical ratings	400 V ~	contact A-C	16(10) A
		contact A-B	8(5) A
		contact A-D	8(5) A
	230 V ~ 12 W (pilot duty only)		
Pulsation plug	Fitted into all HP bellows		
Locking plate and screw	To lock and seal range and/or differential screw. Standard included on types P736LCW, MCB, MCS and PGB. Optional on all other types (quantity orders only)		
Protection Class	IP30		
Material	Case	1,5 cold-rolled zinc plated steel	
	Cover	2 mm ABS plastic blue (RAL 5007)	
	Contact unit	Large copper-backed silver contacts	
Accessories (see pag. 4)	Mounting bracket Compression coupling 90 cm capillary with two flare nuts 90 cm flexible synthetic hose with two flare nuts		
Shipping weight	ind. pack	0.74 kg	
	-93xx	}	Ind. overpack 24 pcs. (18 kg)
	-97xx		Bulk pack 24 pcs. (16 kg)
	-94xx	}	Ind. overpack 16 pcs. (12kg)
	-98xx		

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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