

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

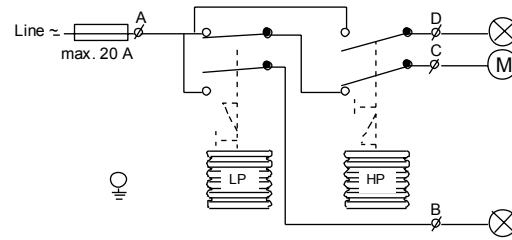
On most models the range scale indicates the high switch point (exception: LP side of P736PGA, P736PGB, here the range scale indicates the low switching point). To obtain low switch point deduct differential value from the high switch point.

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.

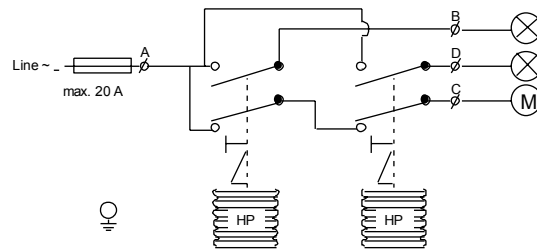
Contact functions

(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

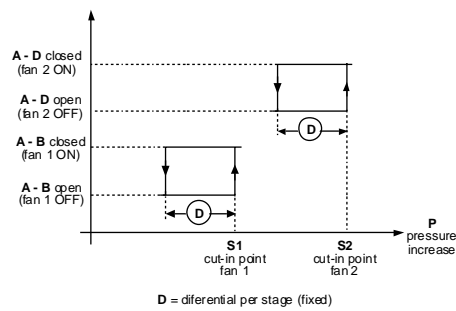


Fig.3a

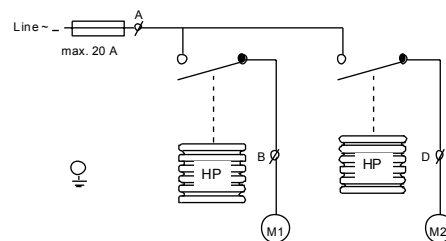


Fig. 3b

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

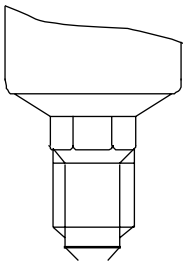
Dual pressure Manual reset HP/HP, TÜV-Bergrenzer + Sicherheitsbegrenzer

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	

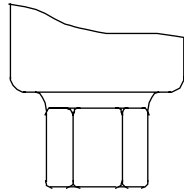
- **** Can be set-up for quantity orders
- ** Resetable at 3 bar below cut-out point
- * Resetable at 0.5 bar above cut-out point

Note: 100 kPa = 1 bar ≈ 14.5 psi

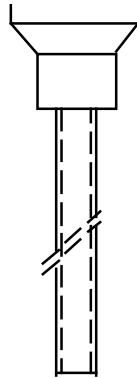
Pressure connections



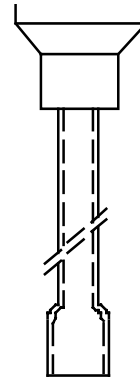
**Fig. 4
Style 5**
Male connector
7/16"-20 UNF for 1/4"
6 mm flare nut.



**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)

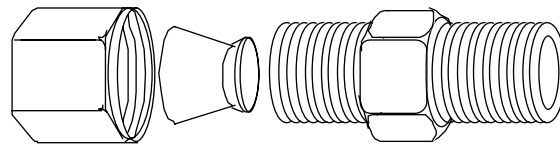


Fig. 8

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

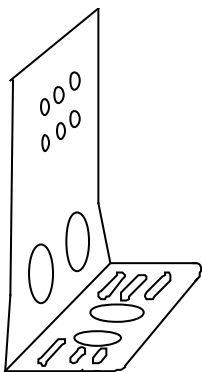


Fig. 9
Mounting bracket
Order number 271-51L

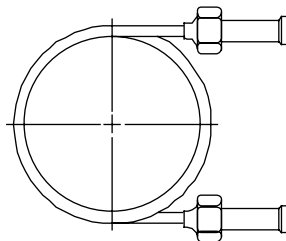


Fig. 10
90 cm Capillary with (2) flare
nuts (1/4" SAE)
Order number **SEC002N600**

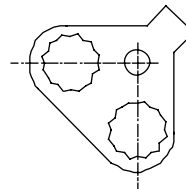


Fig. 11
Locking kit
Order number
KIT023N600

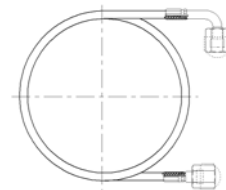
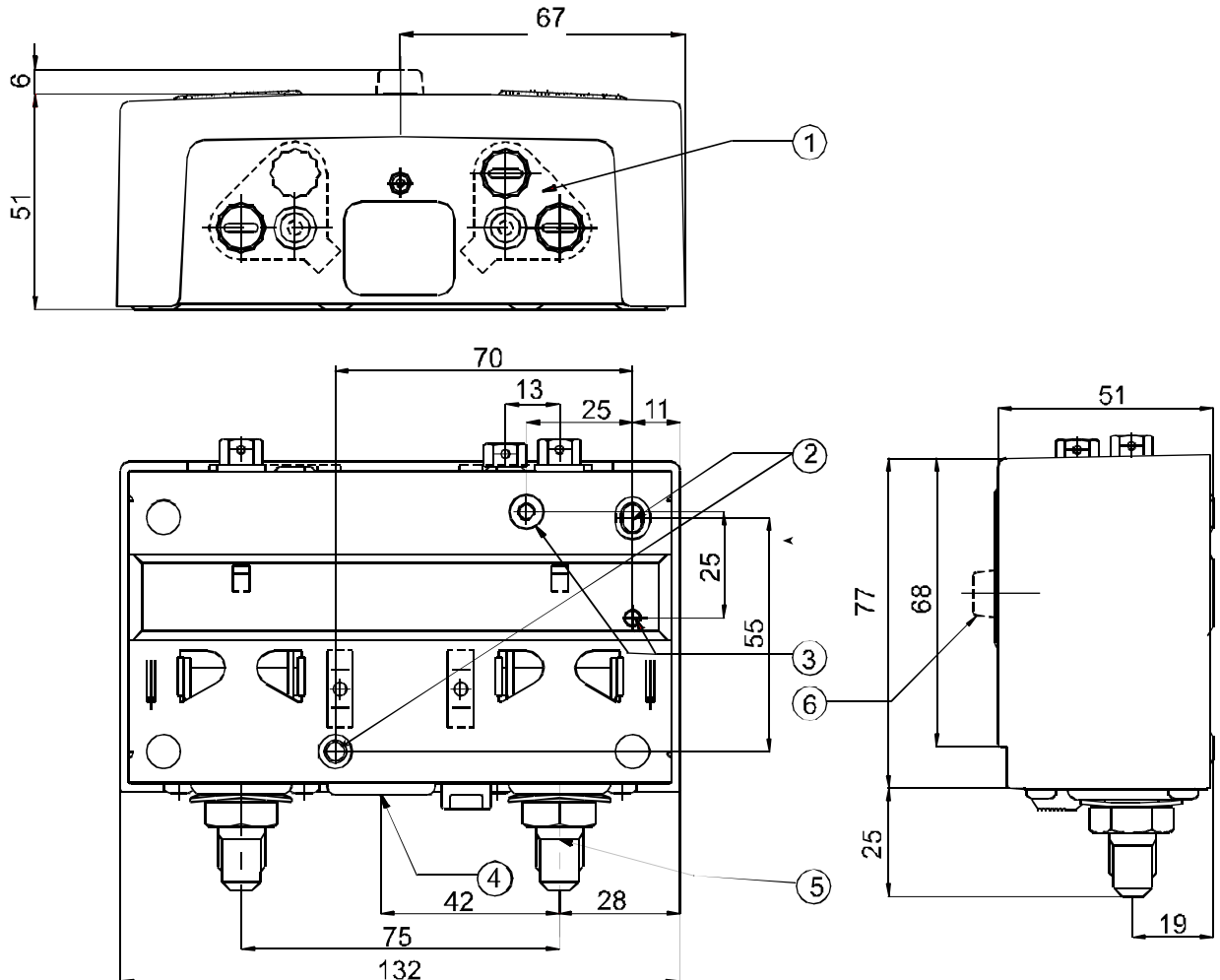


Fig. 12
90 cm Flexible synthetic
refrigeration hose with (2)
flare nuts (1/4" SAE)
Order number
H735AA-90D

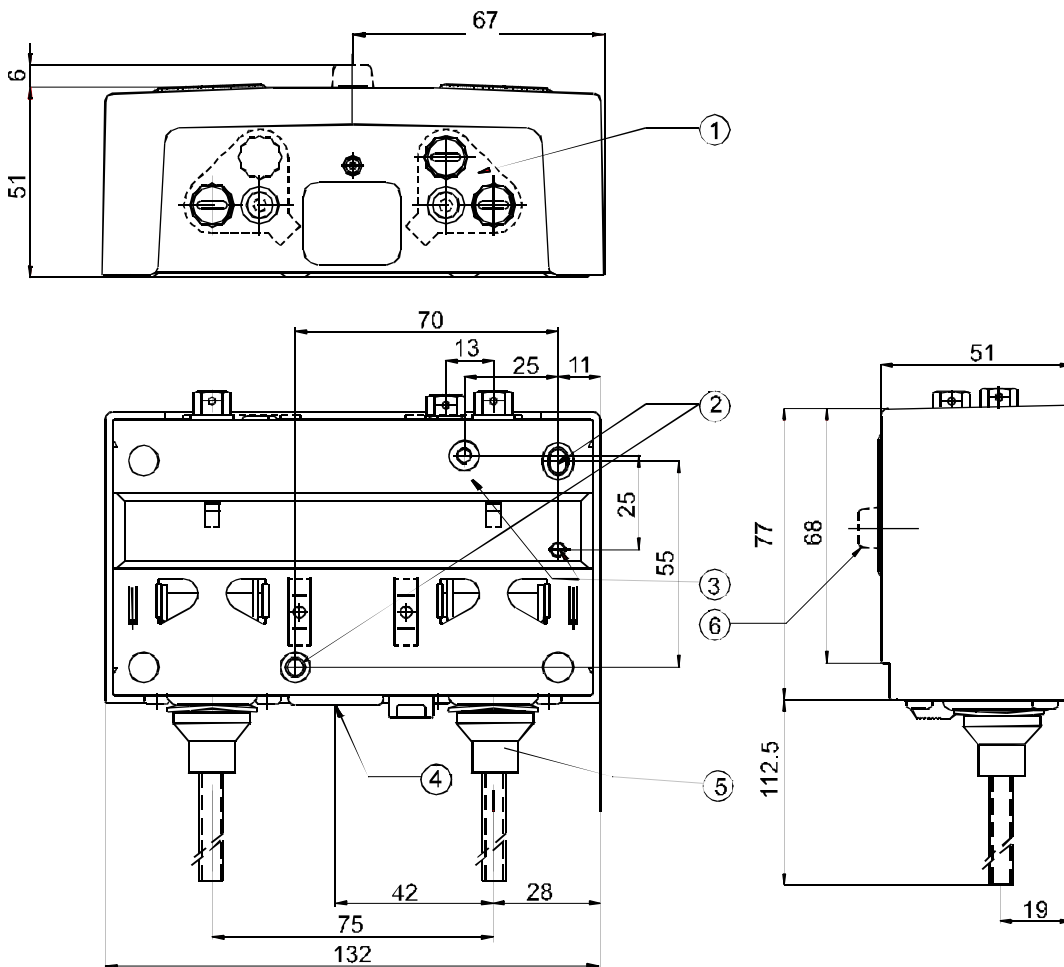
Dimensions (mm)



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 5: $\frac{7}{16}$ "-20 UNF male (shown)
Style 15: $\frac{1}{4}$ "-18 NPT female
6. reset button (on manual reset models only)

Fig. 12

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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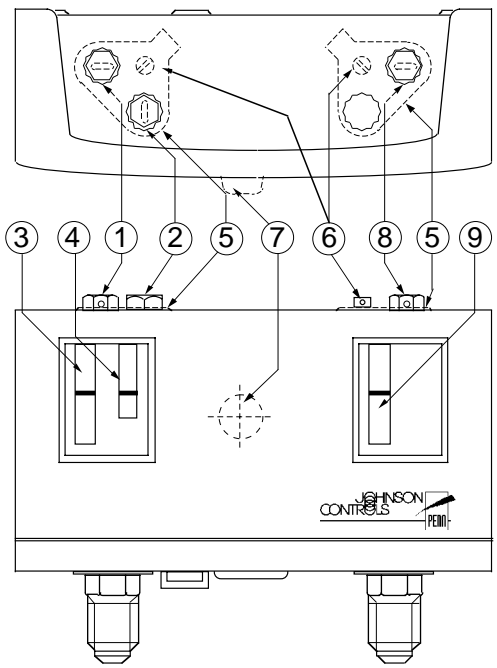
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Instruction sheet

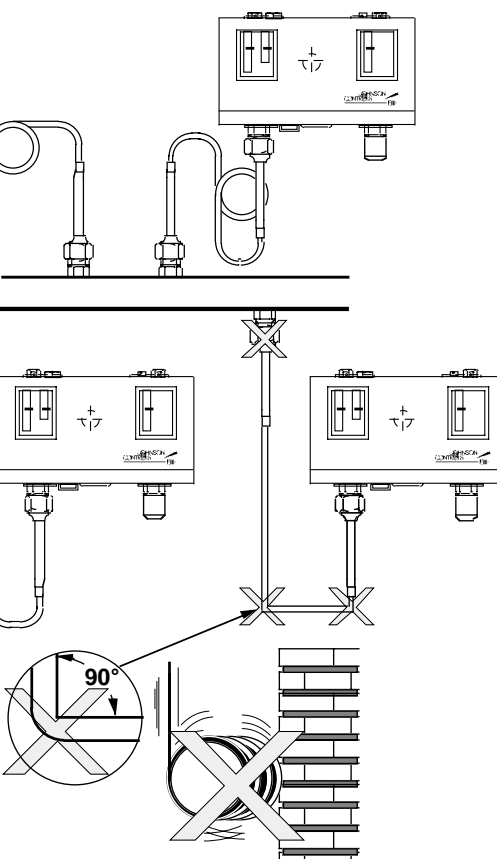
P736
Dual Pressure Control

Specification Specificatie Especificação Beskrivelse Technická data	Description Descripción Especificación Spesifikationer	Spesifikation Specifiche Erittely Προδιαγραφές
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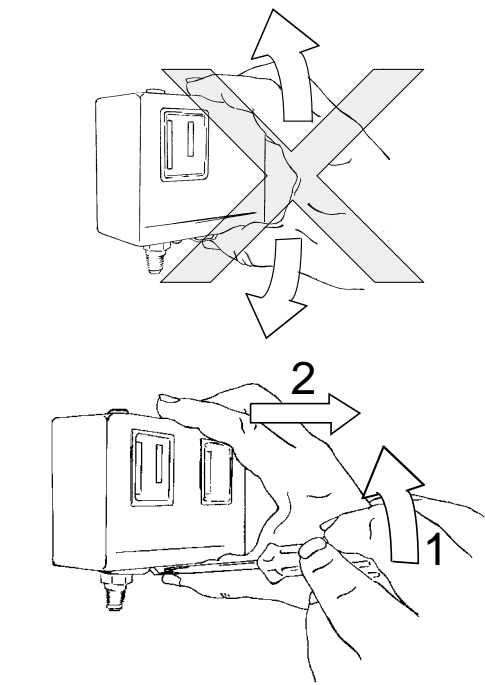
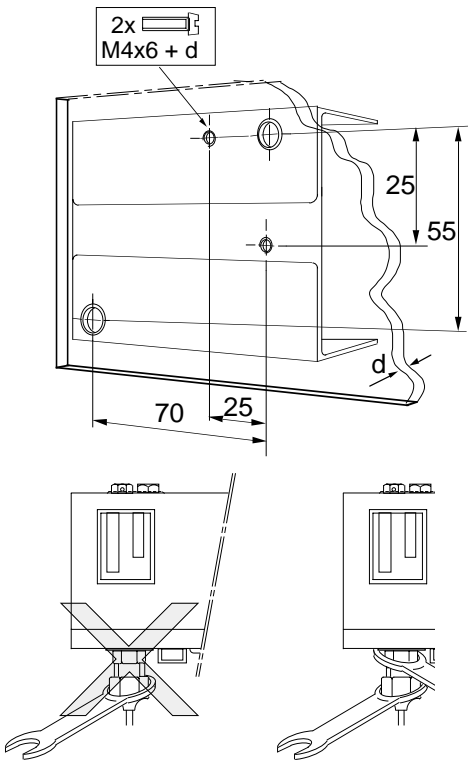


T min.:	-50 °C
PED:	-20 °C
T max.:	+55 °C

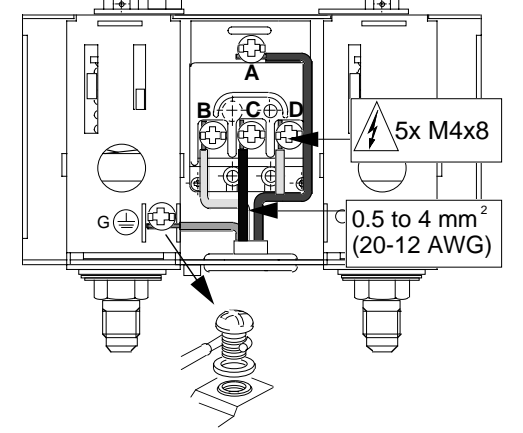
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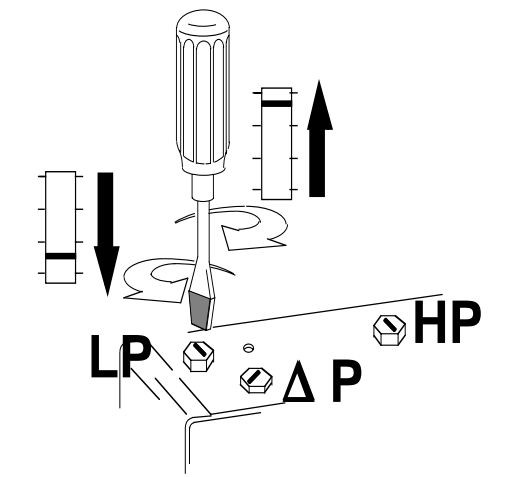
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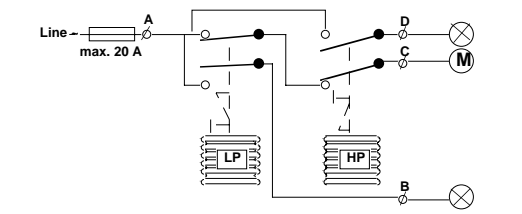
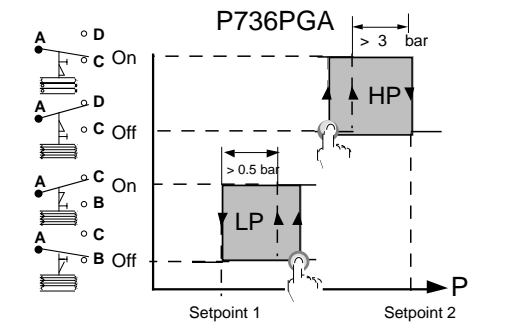
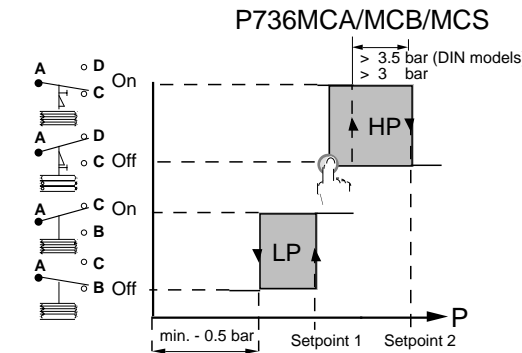
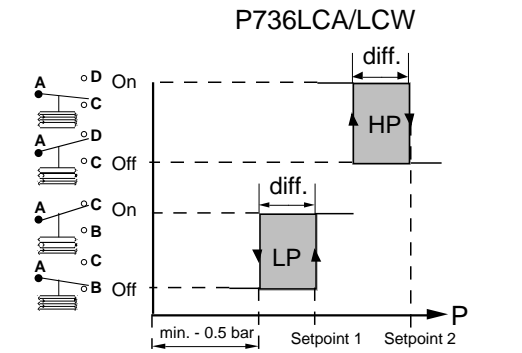
Wiring Bedrading Cablado Elektrisk installation Zapojeni	Raccordement Cableado Ledningar Kabling	Verdrahtung Cablaggio Jodotus Καλωδίωση
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Adjustment Instelling Ajuste Justering Seřizenı	Réglage Ajuste Justering Justering	Einstellung Regolazione Säätö Ρύθμιση
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Adjustment Instelling Ajuste Justering Seřizenı	Réglage Ajuste Justering Justering	Einstellung Regolazione Säätö Ρύθμιση
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Specification Specificatie Especificação Beskrivelse Technická data	Description Descripción Especificación Spesifikationer	Spesifikation Specifiche Erittely Προδιαγραφές
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Electrical rating:
contact A-C: 16(10) A, 400V ~ 8(5) A, 400V ~ 230 V_{AC}, 12W (pilot duty only)
IP30 according to DIN 40050 and IEC 144
contact A-B and A-D:
Enclosure:
Amb. temp. limits: -50 to +55 °C for standard models
-20 to +55 °C for PED models
(+70°C max. duration two hours)
-50 to +55 °C
Storage temp.:
Max. bellows press.: All high pressure bellows: 33 bar
All low pressure bellows: 22 bar
except NH3 (ammonia) LP side: 14 bar

note: 1 bar = 100 kPa = 14.5 psi

ENGLISH

READ THIS INSTRUCTION SHEET CAREFULLY BEFORE INSTALLING, RETAIN IT SAFELY FOR FUTURE REFERENCE.

- 1 Setpoint adjustment screw, LP side (LP)
- 2 Differential adjustment screw, LP side (not on P736PGA-xxx models)
- 3 Setpoint indicator, LP side
- 4 Differential indicator, LP side (not on P736PGA-xxx models) (ΔP)
- 5 Lock plate (if applied)
- 6 Lock screw (if applied)
- 7 Reset button (only manual reset models)
- 8 Setpoint adjustment screw, HP side (HP)
- 9 Setpoint indicator, HP side

The P736 is a pressure control designed to sense pressure of non-corrosive refrigerants. The P736xxx-97xx series are also suitable for use in ammonia applications.

According to EN 60730 it is a type 1 action, incorporate control, suitable for surface mounting on a plane surface and for use in normal pollution situation.

The P736 is intended to control equipment under normal operating conditions. Where failure or malfunction of the P736 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 malfunction of the P736 must be incorporated into and maintained as part of the control system.

INSTALLATION

Disconnect from power supply before the cover is removed.

Cover removal
Unlock snap with tool in one hand pull back cover with the other hand as shown.

Wiring
All wiring should conform to local codes and must be carried out by authorized personnel only. When using multi-stranded wire apply a cable ferrule to the cable end.

Check out procedure
Before leaving the installation observe at least three complete operating cycles to be sure that all components are functioning correctly. If not contact your supplier.

FRANÇAIS

LISEZ ATTENTIVEMENT CES INSTRUCTIONS AVANT DE COMMENCER L'INSTALLATION ET CONSERVEZ-LES POUR VOUS Y REFERER ULTERIEUREMENT

1. Vis de réglage de la consigne, côté LP (LP)
2. Vis de réglage du différentiel, côté LP (pas sur les modèles P736PGA-xxx) (ΔP)
3. Indicateur de consigne, côté LP (pas sur les modèles P736PGA-xxx) (si elle existe)
4. Indicateur du différentiel, côté LP (pas sur les modèles P736PGA-xxx) (si elle existe)
5. Case de serrure (pour les modèles à réenclenchement manuel uniquement)
6. Vis de la case de serrure
7. Bouton de réenclenchement
8. Vis de réglage de la consigne, côté HP (HP)
9. Indicateur de consigne, côté HP

Le modèle P736 est un régulateur de pression destiné à détecter la pression de réfrigérants non corrosifs. Les séries P736xxx-97xx conviennent également dans l'emploi d'applications d'ammoniac.

D'après la norme EN60730 c'est un régulateur incorporé, action type 1, conçu pour un montage sur surface plane et utilisé dans des environnements normalement pollués.

Le contrôleur P736 est destiné à commander des équipements dans des conditions d'exploitation normales. Lorsqu'une défaillance ou un mauvais fonctionnement de l'P736 peut entraîner des conditions d'exploitation anormales pouvant provoquer des dommages corporels ou matériels, il convient d'intégrer dans le système de commande d'autres dispositifs (commandes de limite ou de sécurité) ou systèmes (systèmes d'alarme ou de surveillance) destinés à prévenir ou à protéger contre toute défaillance ou dysfonctionnement de l'P736. Ces dispositifs et systèmes complémentaires doivent en outre faire l'objet d'un entretien et d'une maintenance appropriés.

INSTALLATION

Couper l'alimentation électrique avant d'enlever le couvercle.

Pour ôter la couverture
Ouvrez la pression en vous aidant d'un outil dans une main et, avec l'autre main, repoussez la couverture comme indiqué sur l'illustration

Câblage
Tous les raccordements doivent être conformes aux normes en vigueur et ne peuvent être réalisés que par du personnel autorisé. En cas d'utilisation de câble souple multi-brins, utiliser un embout à sertir.

Procédure de contrôle
Après avoir terminé l'installation, observez au moins trois cycles complets de fonctionnement pour s'assurer que tous les composants fonctionnent correctement. Si cela n'est pas le cas, contactez votre fournisseur.

DEUTSCH

BITTE LESEN SIE DIESE ANWEISUNGEN VOR DER INSTALLATION SORGFÄLTIG DURCH UND BEWAHREN SIE SIE ZUR WEITEREN VERWENDUNG AUF.

- 1 Sollwertinstellschraube, Niederdruckseite (LP)
- 2 Differentialeinstellschraube, Niederdruckseite (Nicht bei Modellen P736PGA-xxx) (ΔP)
- 3 Sollwertanzeige, Niederdruckseite (Nicht bei Modellen P736PGA-xxx) (falls zutreffend)
- 4 Differentialanzeige, Niederdruckseite (falls zutreffend)
- 5 Sicherungsscheibe (falls zutreffend)
- 6 Sicherungsschraube (falls zutreffend)
- 7 Rückstelltaaste (Nur Modelle mit manueller Rückstellung)
- 8 Sollwertinstellschraube, Hochdruckseite (HP)
- 9 Sollwertanzeige, Hochdruckseite

Der P736 ist ein Druckregler zum Fühlen des Drucks nichtaggressiver Kühlmittel. Die Baureihe P736xxx-97xx ist auch für den Einsatz in Verbindung mit Ammoniak geeignet.

Dieses ist entsprechend EN 60730 ein Wirkungsweise Typ 1. Integriertes Regel- und Steuergerät. Geeignet als Aufbaugerät, z. B. für Wandmontage und für Anwendung in Umgebungsbedingungen mit üblicher Verunreinigung.

Das P736 ist zur Steuerung von Geräten unter normalen Betriebsbedingungen ausgelegt. In Fällen, in denen eine Fehlfunktion oder ein Defekt des P736 zu außergewöhnlichen Betriebsbedingungen führen könnte, die Verletzungen oder die Beschädigung von Geräten oder anderen Einrichtungsgegenständen nach sich ziehen könnten, sollten andere Geräte (Toleranz- oder Sicherheitssteuerungen) oder Systeme (Alarm- oder Überwachungssysteme), die vor einem Defekt oder einer Fehlfunktion des P736 warnen oder dagegen schützen, als Teil des Steuerungssystems eingesetzt und gewartet werden.

Montage

Vor dem Entfernen des Deckels Spannung abschalten.

Entfernung der Abdeckung.
Mit dem Werkzeug in einer Hand Schnappverschluss öffnen und mit der anderen Hand die Abdeckung zurückziehen, wie das gezeigt wird.

Verdrahtung
Alle Verdrahtungen müssen den am Einsatzort geltenden Vorschriften entsprechen und sind ausschließlich dazu befugten Personen vorbehalten. Bei Verwendung feindrätiger Leitungen sind Adernendhülsen zu verwenden.

Überprüfung
Vor dem Verlassen der Anlage sollten Sie diese mindestens drei Betriebszyklen beobachten und überprüfen, daß alle Komponenten ordnungsgemäß funktionieren. Sollte dies nicht der Fall, wenden Sie sich bitte an Ihren Händler.

NEDERLANDS

NEEM DEZE INSTRUCTIES GRONDIG DOOR ALVORENS U BEGINT MET HET INSTALLEREN EN BEWAAR ZE VOOR TOEKOMSTIG GEBRUIK

- 1 Setpoint instel Schroef, LP zijde (LP)
- 2 Differentie instel Schroef, LP zijde (niet op P736PGA-xxx modellen) (ΔP)
- 3 Setpoint aanwijsschaal, LP zijde (niet op P736PGA-xxx modellen)
- 4 Differentie aanwijsschaal, LP zijde (optioneel)
- 5 Boroplaat (optioneel)
- 6 Boroplaat Schroef (optioneel)
- 7 Reset drukknop (alleen op man. reset modellen)
- 8 Setpoint instel Schroef, HP zijde (HP)
- 9 Setpoint aanwijsschaal, HP zijde

De P736 is een pressostaat ontworpen voor het meten van drukken van niet corrosive koelmiddelen. De P736xxx-97xx series zijn ook te gebruiken voor ammoniak toepassingen.

Volgens EN 60730 is het een type 1 actie in te bouwen apparaat, geschikt voor montage op een plat oppervlak en geschikt voor gebruik in een normaal vervuilde omgeving.

De P736 is bedoeld voor het onder normale bedrijfscondities regelen van apparatuur. Indien een defect aan of het slecht functioneren van de P736 regelaar kan leiden tot abnormale bedrijfscondities, welke tot persoonlijk letsel of schade aan de apparatuur of aan andere bezittingen kan leiden, dienen andere apparaten (begrenzing- of beveiligingsapparatuur) of systemen (alarm- of overkoepelende systemen) ter alarmering of beveiliging tegen het niet goed functioneren van de P736 te worden geïntegreerd in en te worden onderhouden als onderdeel van het regel systeem.

Montage

Schakel de voedingsspanning af voordat het deksel wordt verwijderd.

Cover verwijderen
Sluiting openen met gereedschap en cover met andere hand afnemen, zoals afgebeeld.

Bedrading
De installatie, de elektrische aansluiting en de instellingen dienen overeen te stemmen met de plaatselijke voorschriften en mogen enkel worden uitgevoerd door bevoegd personeel. Indien een draad met flexibele kern wordt toegepast dient het uiteinde van de draden te worden voorzien van een ader eindhuls.

Controleprocedure
Controleer, voordat u de installatie zelfstandig laat werken, gedurende ten minste drie complete werkcycli of alle onderdelen correct werken. Werk de installatie niet correct, neem dan contact op met uw leverancier.

