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.

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

<table>
<thead>
<tr>
<th>Feature and Benefits</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generous wiring space</td>
<td>Easy wiring and maintenance</td>
</tr>
<tr>
<td>Trip-free manual reset</td>
<td>Override is not possible in the control function</td>
</tr>
<tr>
<td>Separate alarm contacts for both low pressure and high pressure cut-out (except P736ALA)</td>
<td>Easy monitoring of the fault location</td>
</tr>
</tbody>
</table>
**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.
### Type number selection table

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

<table>
<thead>
<tr>
<th>Family Code</th>
<th>Pressure Connection</th>
<th>Left Side</th>
<th>Right Side</th>
<th>Contact function (Figure)</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>P736LCA</td>
<td>-9300</td>
<td>-9320</td>
<td>-9400</td>
<td>-0.5 to 7</td>
<td>0.6 to 3</td>
</tr>
<tr>
<td>P736MCA</td>
<td>-9300</td>
<td>-9320</td>
<td>-9400</td>
<td>-0.5 to 7</td>
<td>0.6 to 3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Family Code</th>
<th>Pressure Connection</th>
<th>Left Side</th>
<th>Right Side</th>
<th>Contact function (Figure)</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>P736LCA</td>
<td>-9700</td>
<td>-9450</td>
<td>-9450</td>
<td>-0.5 to 7</td>
<td>0.6 to 3</td>
</tr>
<tr>
<td>P736MCA</td>
<td>-9700</td>
<td>-9450</td>
<td>-9450</td>
<td>-0.5 to 7</td>
<td>0.6 to 3</td>
</tr>
<tr>
<td>P736PGA</td>
<td>-9700</td>
<td>-9450</td>
<td>-9450</td>
<td>-0.5 to 7</td>
<td>0.6 to 3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Family Code</th>
<th>Pressure Connection</th>
<th>Left Side</th>
<th>Right Side</th>
<th>Contact function (Figure)</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>P736ALA</td>
<td>-9351</td>
<td>-9451</td>
<td>-9451</td>
<td>3.5 to 21</td>
<td>1.8 (fixed)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Family Code</th>
<th>Pressure Connection</th>
<th>Left Side</th>
<th>Right Side</th>
<th>Contact function (Figure)</th>
<th>Approved according to PED 97/23/CE Cat. IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>P736LCW</td>
<td>-9300</td>
<td>-9320</td>
<td>-9800</td>
<td>-0.5 to 7</td>
<td>0.6 to 3</td>
</tr>
<tr>
<td>P736MWB</td>
<td>-9300</td>
<td>-9320</td>
<td>-9800</td>
<td>-0.5 to 7</td>
<td>0.6 to 3</td>
</tr>
<tr>
<td>P736MCS</td>
<td>-9300</td>
<td>-9320</td>
<td>-9800</td>
<td>-0.5 to 7</td>
<td>0.6 to 3</td>
</tr>
<tr>
<td>P736GB</td>
<td>-9300</td>
<td>-9320</td>
<td>-9800</td>
<td>-0.5 to 7</td>
<td>0.6 to 3</td>
</tr>
</tbody>
</table>

**Dual pressure Manual reset HP/HP, TÜV-Bergenzer + Sicherheitsbegrenzer**

<table>
<thead>
<tr>
<th>Family Code</th>
<th>Pressure Connection</th>
<th>Left Side</th>
<th>Right Side</th>
<th>Contact function (Figure)</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>P736PLM</td>
<td>-9370</td>
<td>-9370</td>
<td></td>
<td></td>
<td>3 to 30</td>
</tr>
</tbody>
</table>

**Notes:**
- **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  
\( \frac{7}{16} \text{"}-20 \text{ UNF} \) for 1/4"  
6 mm flare nut.

Fig. 5  
Style 15  
Female connector  
\( \frac{7}{16} \text{"}-18 \text{ NPT} \)

Fig. 6  
Style 28  
Braze connection  
6 mm ODM

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

Accessories (optional)

Fig. 8

<table>
<thead>
<tr>
<th>Description</th>
<th>Application</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fits into style 15</td>
<td>For 6 mm copper or steel tubing</td>
<td>CNR003N001R</td>
</tr>
<tr>
<td>pressure connectors</td>
<td>For 8 mm copper or steel tubing</td>
<td>CNR003N002R</td>
</tr>
</tbody>
</table>

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 Ø 4.5 mm
3. two mounting holes Ø M4 (back side)
4. cable inlet grommet (cable range to Ø 16 mm)
5. power element:
   Style 5: \(\frac{1}{4}\text{"}\)-20 UNF male (shown)
   Style 15: \(\frac{1}{4}\text{"}\)-18 NPT female
6. reset button (on manual reset models only)

Fig. 12
Dimensions (mm)

1. lock plate (if applied)
2. two mounting holes Ø 4.5 mm
3. two mounting holes Ø M4 (back side)
4. cable inlet grommet (cable range to Ø 16 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
## Specifications

<table>
<thead>
<tr>
<th><strong>Pressure connections</strong></th>
<th>Style 5, 15, 28, 30 (see drawings)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating ranges and diff.</strong></td>
<td>See type number selection</td>
</tr>
<tr>
<td><strong>Adjustments</strong></td>
<td>See type number selection</td>
</tr>
</tbody>
</table>
| **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. (12 kg)  
-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.*
**P736 Dual Pressure Control**

**Specification**

- **Mounting**
  - Vertical
  - Horizontal

- **Temperature**
  - Min. -50 °C
  - Max. 55 °C

- **Relative Humidity**
  - 90% max.

- **Electrical Rating**
  - Control A/C
  - 160/240 A, 60V±5% A/C
  - 220 V...12 W (pilot duty only)

- **Mechanical**
  - For use with flexible multi-strand cable.
  - Suitable for ammonia applications.

**Description**

- **Setpoint Indicator**
  - LP side
  - HP side

- **Adjustment Screw**
  - LP side
  - HP side

- **Reset Button**
  - LP side (optional reset models)
  - HP side

**Installation**

- **Disconnect from power supply before the cover is removed.**

- **Check out procedure**
  - Before installation observe at least three complete operating cycles to ensure that all components are functioning correctly. If not contact your supplier.
Desconecte la corriente antes de quitar la tapa.

Před instalací pozornì pročtìte tento montàní nìvod a zjistìte, jestli je toto zařízení vhodné pro vaše používání.

Procedimiento de control

Para retirar la tapa:

1. Abra el tornillo de bloqueo (si se aplica).
2. Retire el tornillo de ajuste del punto de control, lado Punto Bajo (si no es P736PGAxxx).
3. Abra el tapón de admisión (si es P736PGAxxx).
4. Eleve el cilindro de salida (si es P736PGAxxx).
5. Cierre el tapón de admisión (si es P736PGAxxx).
6. Extraiga el tornillo de ajuste del punto de control, lado Punto Bajo (si no es P736PGAxxx).

Desconectar la corriente antes de quitar la tapa.