

- **Very fast acting**

---
- **Visual indication of operation**

---
- **Optional electrical indication of operation**

---
- **Wide range of adjustable opening pressures**

---
- **Environmentally sealed switch**

---
- **Optional air bleed screw**

---
- **Optional EExd microswitch for hazardous areas**

---

## Introduction

Pyropress fast acting relief valves are used to protect oil cooled transformer installations against the risk of explosion which may occur under severe fault or short circuit conditions. Extremely rapid pressure rise can result from arcing with immediate vaporisation of cooling oil.

This pressure must be relieved instantly to avoid the rupture of the transformer tank.

To ensure the prevention of such hazards a pressure relief valve is required to open quickly and relieve the increase in pressure. The valve must also have adequate relief area to release the volume of oil or gas necessary to restore the pressure to acceptable limits. The Pyropress valve meets all these criteria, and is designed to open fully, within 2 milliseconds when a safe maximum pressure limit is reached.

## Specification

The valve achieves its performance by a design of dual valve seals and operates as follows:

Under normal pressure conditions the valve is held closed by a spring. When the pressure within the tank reaches the pre-set opening pressure, the valve rises from its seat, and opens the first seal. The valve then very rapidly rises as the increased area between the first and second seal requires a much

lower opening pressure. This provides a rapid acceleration to the remainder of the valve opening.

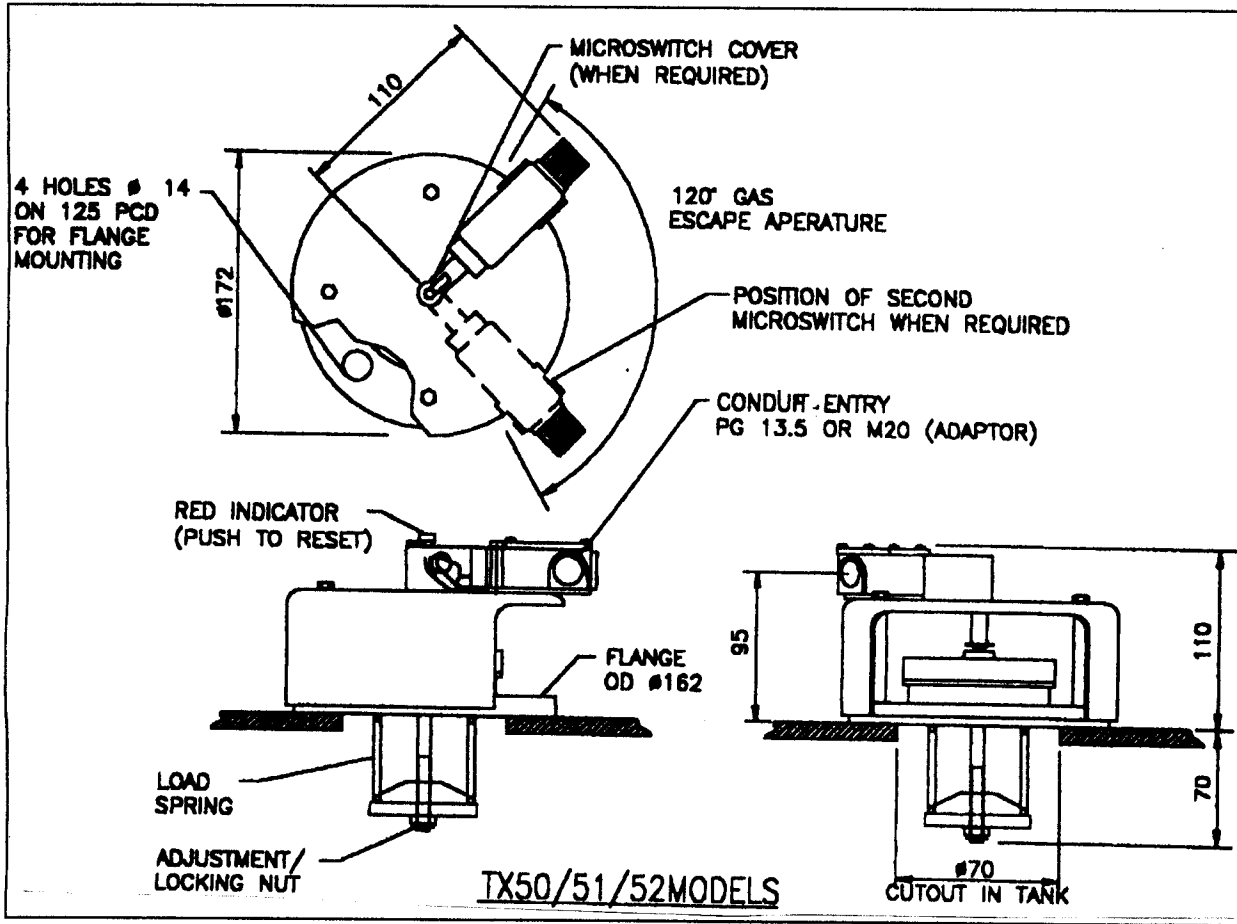
The valve is available with or without the directive cover and microswitch. The cover is fitted with a visual indication of valve actuation, a mechanical valve lift indicator is provided on the top of the valve cover. In the event of the valve operating the bright red anodised aluminium indicator is pushed upwards, and is left protruding 50mm above the top of the valve casing. This can be manually reset.

The microswitch provides remote indication of valve operation, by means of a manually resettable switch assembly. This can be used to provide a signal to an alarm or control panel.

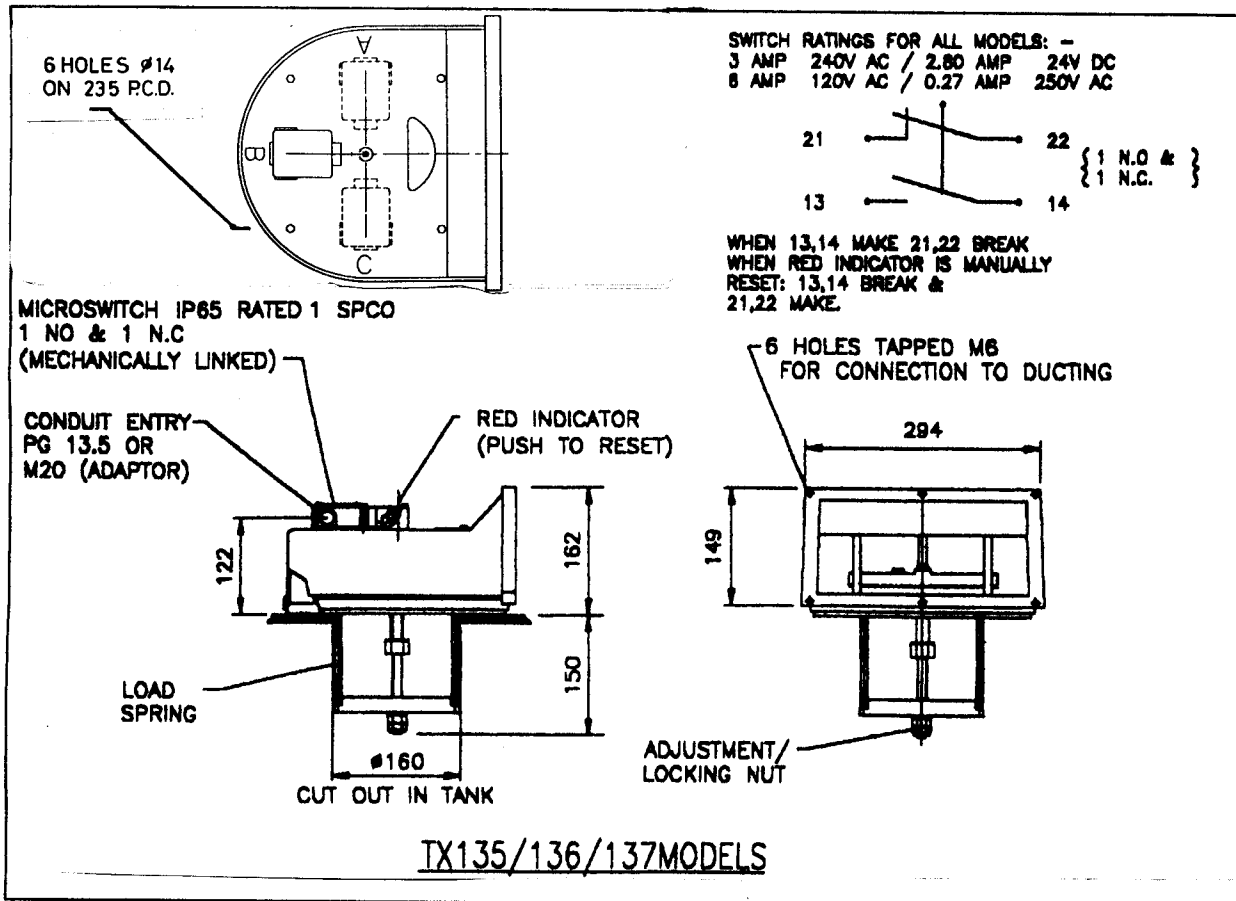
In installations where it is required to completely fill the transformer housing with oil, a bleed screw can be provided to remove all air trapped within the valve assembly. This is an option and should be requested.

# TRANSFORMER RELIEF VALVE

## TX50 Series Pressure Relief Valve



## TX135 Series Pressure Relief Valve



## TX50 Series Pressure Relief Valve

### Technical specification

The Pyropress TX50 series of transformer relief valves have an effective relief area of almost 15 cm<sup>2</sup>, and are suitable for transformers with up to 3,000 litre oil capacity.

Three models are available to provide opening pressure ranges between 4 and 15 PSI. These are factory set to customers requirements.

The Viton seals fitted to the TX50 series valves are suitable for use with Silicon and Midel transformer oils. For information on other oils please consult our sales office.

Various options are available These include leaf guard to stop debris entering the oil escape aperture. Bleed screw and valves that are able to withstand a full vacuum.

### Materials

Main carrier: Anodised aluminium.  
 Valve: Anodised aluminium.  
 Valve seal: Viton.  
 'O' Ring: Viton.  
 Valve Spring: Carbon steel.  
 Valve Cover: Cast aluminium.  
 Spacers: Stainless steel.

Microswitch : Please refer to back page.

<b>Model Number</b>	TX50 (no cover or switch) TX51 (fitted with cover) TX52 (fitted with cover and switch or switches)
<b>Operating pressure</b>	4 - 7, 7 - 11 and 11 - 15 PSI. Please state setting. (setting accuracy +/- 0.5 PSI)
<b>Microswitch Standard -</b>	Single microswitch.
<b>Option -</b>	Dual switches

## TX135 Series Pressure Relief Valve

### Technical specification

The Pyropress TX135 series of transformer relief valves have an effective relief area of 140 cm<sup>2</sup>, and are suitable for transformers with up to 45,000 litre oil capacity.

Three models are available to provide opening pressure ranges between 4 and 12 PSI. These are factory set to customers requirements.

The NBR seals fitted to the TX135 series valves are suitable for use with Silicon and Midel transformer oils. For information on other oils please consult our sales office.

The protective cover is designed to direct the flow of oil in a single direction, preferably safely to the ground without risking personal injury. Which lends itself for easy attachment to ducting.

These valves are suitable for use in vacuum applications.

### Materials

Main carrier: Anodised aluminium.  
 Valve: Anodised aluminium.  
 Valve seal: Nitrile Butyl rubber.  
 Quad Ring: Nitrile Butyl rubber.  
 Valve Spring: Carbon steel.  
 Valve Cover: Cast aluminium.  
 Spacers: Stainless steel.

Microswitch : Please refer to back page.

<b>Model Number</b>	TX135 (no cover or switch) TX136 (fitted with cover) TX137 (fitted with cover and switch or switches)
<b>Operating pressure</b>	4 - 6, 6 - 9 and 9 - 12 PSI. Please state setting. (setting accuracy +/- 0.5 PSI)
<b>Microswitch Standard -</b>	Single microswitch. Please state position. A, B or C (see drawing)
<b>Option -</b>	Dual switches. Please state positions. A & B or B & C (see drawing)

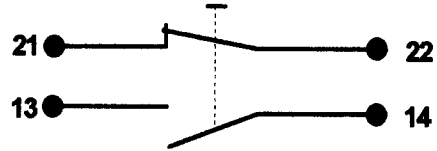
## Microswitch Details

The microswitches are housed in a painted aluminium case which is protected to IP66 standards and contains clamp type terminals. Access is suitable for cables up to 1.5mm<sup>2</sup> single strand or 2.5mm<sup>2</sup> multistrand.. Entry is provided for 20mm threaded conduit.

Rating:           3 Amp 240 VAC  
                       6 Amp 120 VAC  
                       2.8 Amp 24 VDC  
                       0.27 Amp 250 VDC  
                       To BSI EN60947-5-1

Contacts:       Dual S.P.S.T. Silver  
                       (one normally open, one  
                       normally closed,  
                       mechanically linked)

The Pyropress valve is constructed from the highest quality materials and is designed to withstand the most arduous conditions. The main spring is carbon steel, and can be completely immersed in the oil, all other components are either anodised aluminium or stainless steel. This will ensure that the Pyropress valve will continue to provide protection throughout the life of the transformer.



When valve opens: 13,14 make and 21, 22 break.

When red indicator is manually reset: 13, 14 break and 21, 22 make.

### Temperature Range

working:       -30 - +90 °C continuous  
                       -30 - +100 °C intermittent

General arrangement drawings are available upon request, please contact the sales office for further information.  
 Drg. No. A1-M-8750.

Details of the BASEEFA certified flameproof microswitch for hazardous areas are available upon request.

## Part Number Breakdown

**TX50**

50 = No cover or switch	R = 4 - 7 PSI	Number of switches 1 or 2	V = Suitable for vacuum applications
51 = Cover no switch	G = 7 - 11 PSI		B = Bleed screw
52 = Cover and switch	B = 11 - 15 PSI		



**TX137**

135 = No cover or switch	R = 4 - 6 PSI	Number of switches 1 or 2	B = Bleed screw
136 = Cover no switch	G = 6 - 9 PSI		
137 = Cover and switch	B = 9 - 12 PSI		

CONTINUOUS DEVELOPMENT MAY  
 RESULT IN CHANGES TO  
 SPECIFICATION WITHOUT PRIOR  
 NOTICE

PL1302 Ed. C. 02/98  
 PRINTED IN ENGLAND

THE PYROPRESS ENGINEERING COMPANY LIMITED  
 BELL CLOSE, PLYMPTON, PLYMOUTH PL7 4JH, ENGLAND  
 TEL: (#44) 01752 339866.                      FAX: (#44) 01752 336681