

# KPM Vacuum Interrupter Life Analyzer (KPM-VILA)

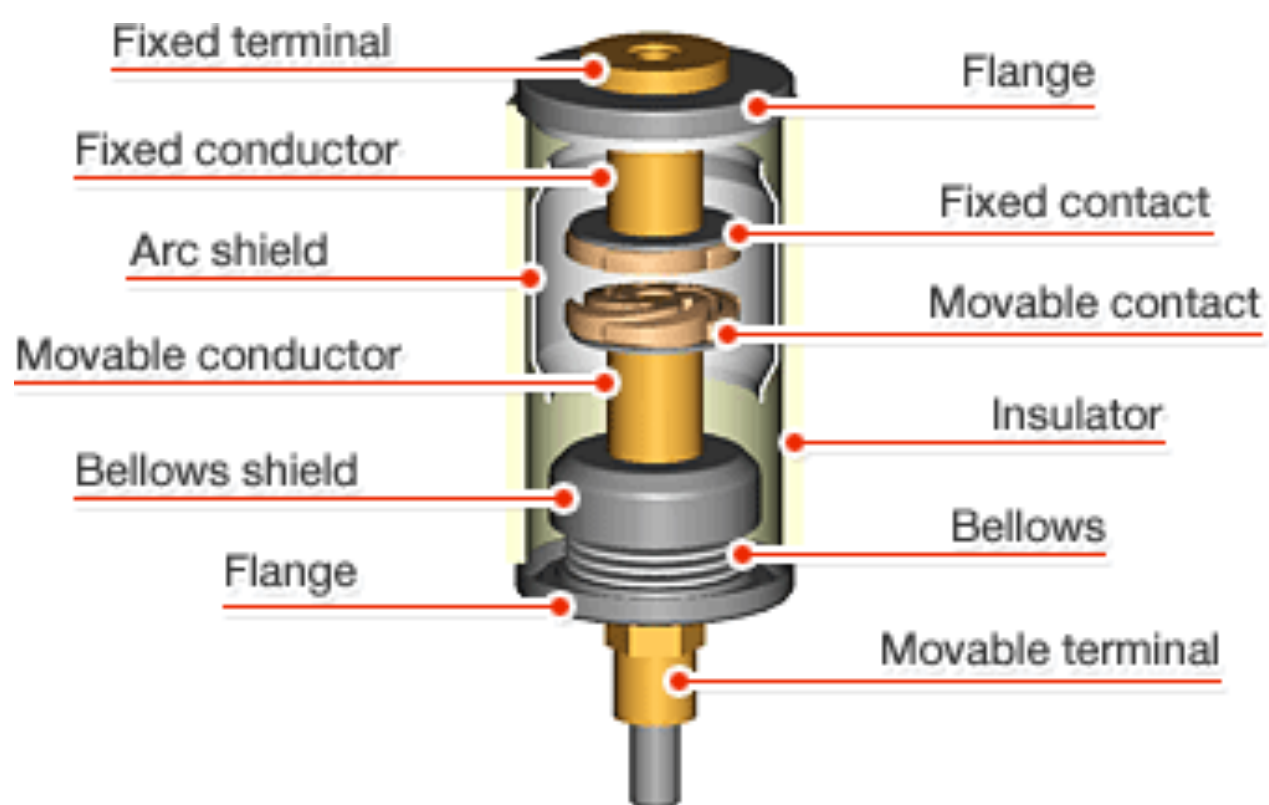
## Understanding Vacuum Interrupter

Vacuum Interrupter are the most critical & most stressed part of a vacuum circuit breaker . The operation of opening and closing of current carrying contacts and associated arc interruption take place in a vacuum interrupter only . The vacuum pressure inside a vacuum interrupter is normally maintained at  $10^{-5}$  bar. Though service life of vacuum interrupters are much longer than other types of circuit breakers, still failure of Vacuum Interrupters are always a matter of concern for electrical maintenance staff .

➤ Much more than a simple Go/No Go Hipot Test.

➤ Predict life of vacuum interrupter.

➤ Predict the vacuum inside.

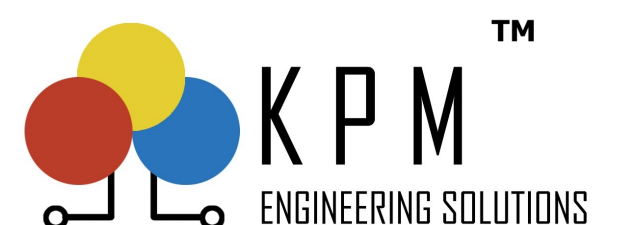


Vacuum Interrupter

The most common method for VI testing is by applying high voltage (DC) across the contacts of the electrodes and the leakage current is measured , but sometimes this method results in false identification of the faulty Vacuum Interrupter as a healthy one. It has been observed that during applying high DC voltages the polarization of charges happens inside the VI bottles due to this few electrons stick to the electrodes . This results in less leakage current hence giving wrong indication about the pressure condition inside . The same VI when again put in service might fail again . Hence now the test equipment based on new methodology of Penning Discharge Principle are considered more reliable

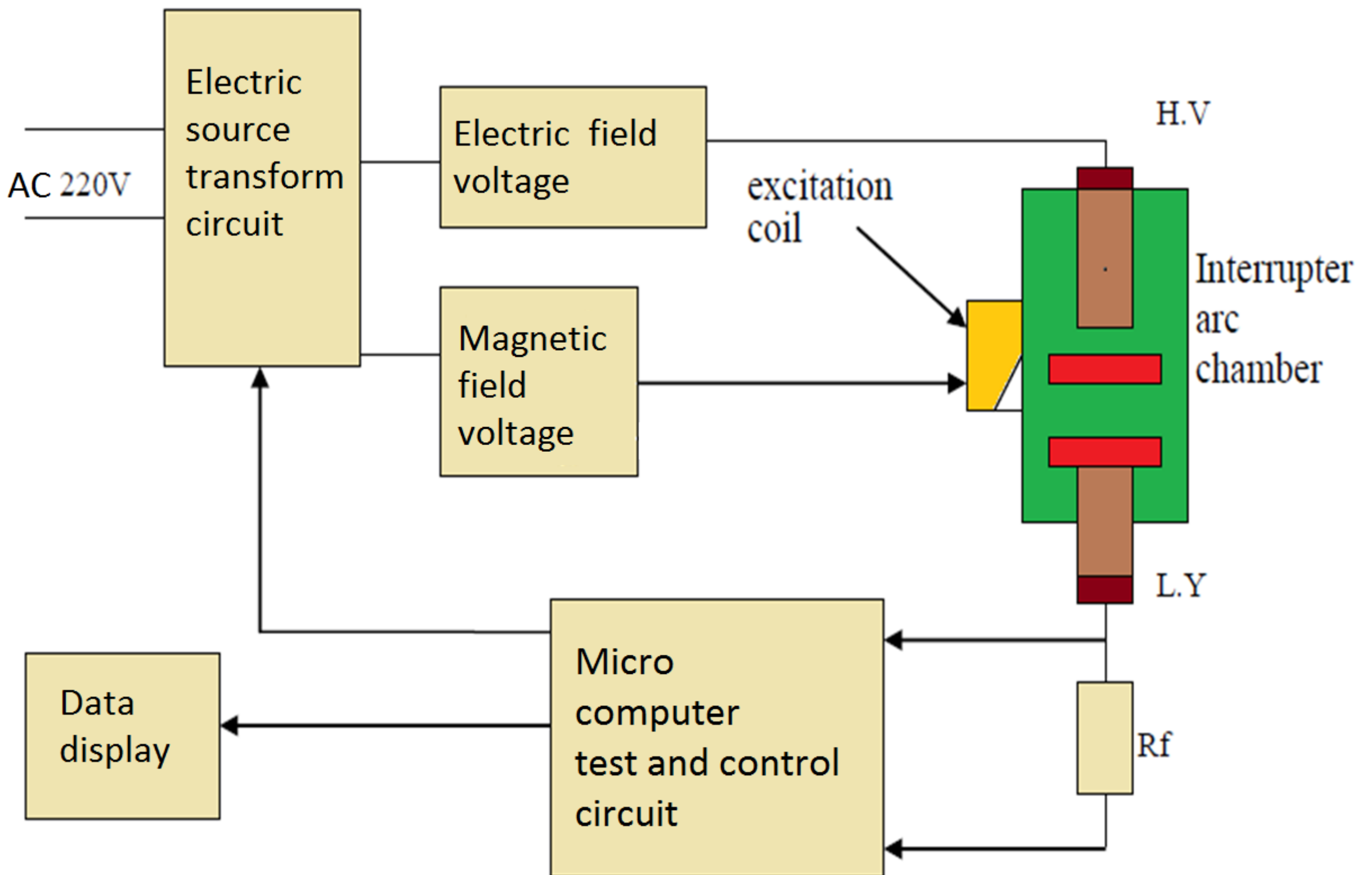
## KPM - VILA

KPM-VILA is based on penning discharge principle and hence more accurate and able to predict the future life expectancy of the vacuum interrupter.



# KPM Vacuum Interrupter Life Analyzer (KPM-VILA)

## Principle Of Operation:



➤ When high voltage is applied across the contacts of the vacuum circuit breaker and magnetic field is also introduced externally then a leakage current flows explained by PENNING DISCHARGE PRINCIPLE

$$I \propto f(P, V, B)$$

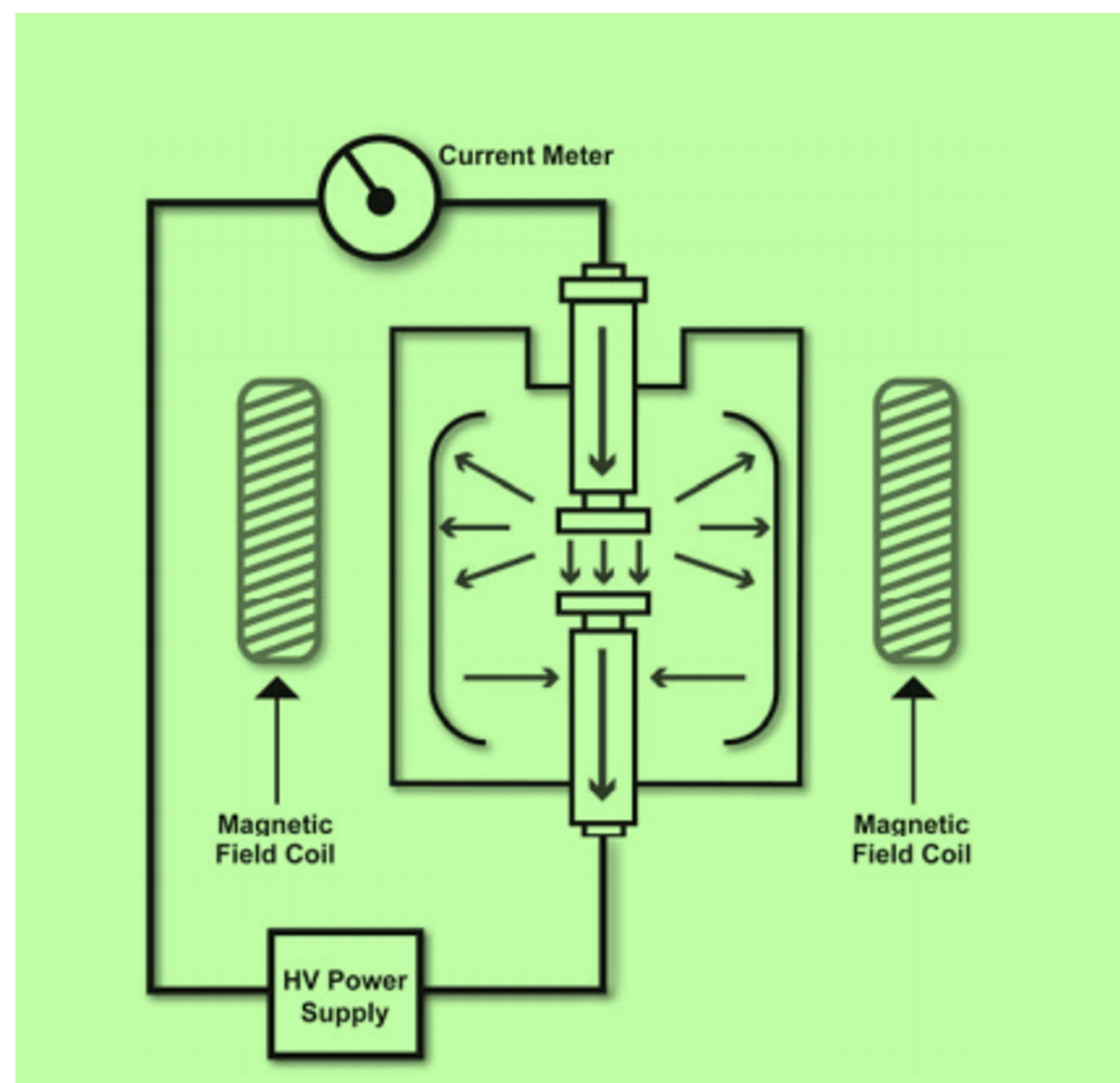
Where I= Leakage Current

P= vacuum Pressure

V= Applied voltage

B= Applied magnetic field

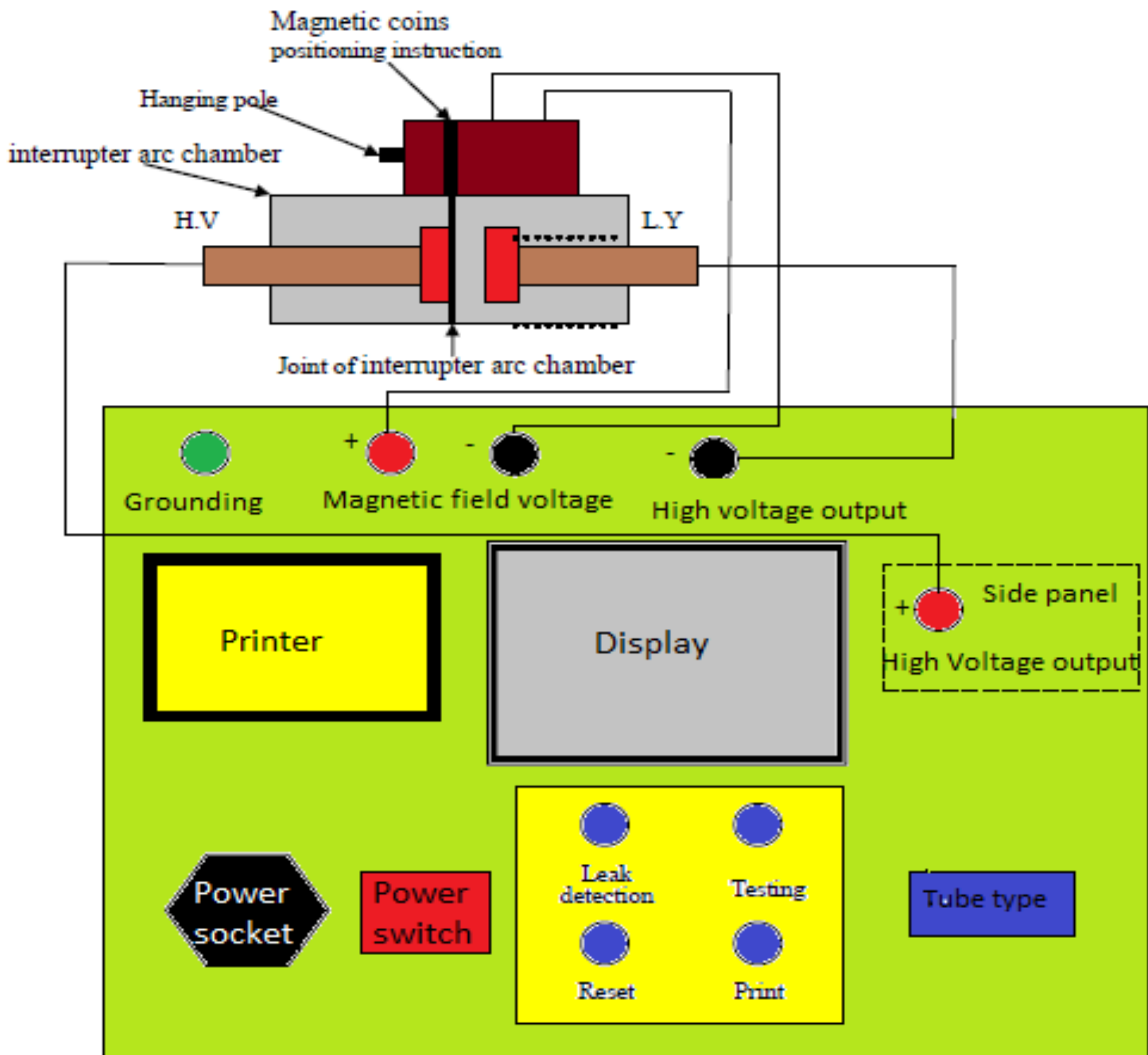
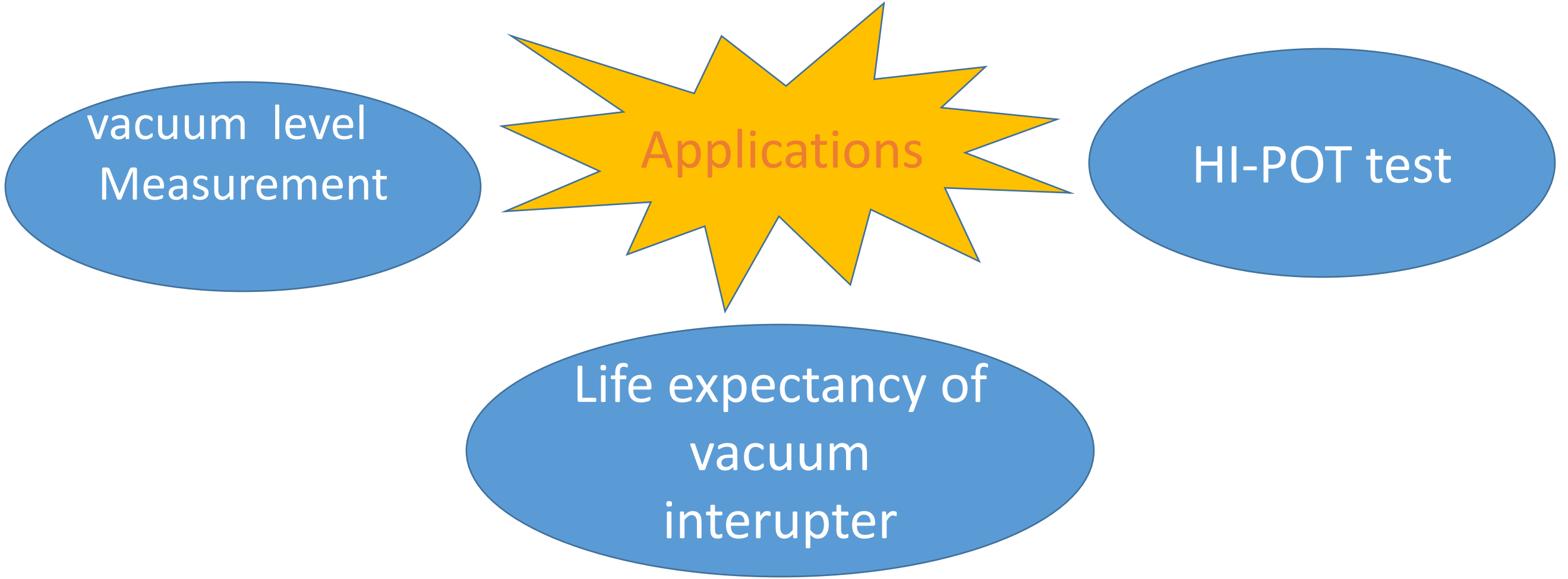
➤ For known value of voltage and magnetic field and for the measured current we get corresponding value of pressure as output.



Working Principle

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## Applications:





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## Technical Specifications:

<b>Detection objects</b>	various models of vacuum switch	<b>Environment</b>	20°C~ 40°C								
<b>Application area</b>	This instrument is a all-purpose type, can measure the vacuum of variety models of open magnetic vacuum tube.	<b>Dimensions</b>	420 × 320 × 280 (mm)								
<b>Measurement accuracy</b>	<table border="0"> <tr> <td>10<sup>-4</sup>-10<sup>-3</sup>Pa</td> <td>10%</td> </tr> <tr> <td>10<sup>-3</sup>-10<sup>-2</sup> Pa</td> <td>10%</td> </tr> <tr> <td>10<sup>-2</sup>-10<sup>-1</sup> Pa</td> <td>10%</td> </tr> <tr> <td>10<sup>-5</sup>-10<sup>-4</sup> Pa</td> <td>10%</td> </tr> </table>	10 <sup>-4</sup> -10 <sup>-3</sup> Pa	10%	10 <sup>-3</sup> -10 <sup>-2</sup> Pa	10%	10 <sup>-2</sup> -10 <sup>-1</sup> Pa	10%	10 <sup>-5</sup> -10 <sup>-4</sup> Pa	10%	<b>Weight</b>	12kgs
10 <sup>-4</sup> -10 <sup>-3</sup> Pa	10%										
10 <sup>-3</sup> -10 <sup>-2</sup> Pa	10%										
10 <sup>-2</sup> -10 <sup>-1</sup> Pa	10%										
10 <sup>-5</sup> -10 <sup>-4</sup> Pa	10%										
<b>High-voltage of pulsed electric field:</b>	30KV	<b>Open distance of switch tube in vacuum test</b>	normal open distance								
<b>Magnetic field voltage:</b>	1700V	<b>Accessories</b>	Magnetic coil: 1 Instruction manual: 1 Certificate : 1 Special test wire: 5 Elastic straps: 1 Coil lanyards:1 Ribbon: 1 Power Line: 1 Printing paper: 2 laps								
<b>Detection range</b>	10 <sup>-5</sup> -10 <sup>-1</sup> Pa										
<b>Sampler</b>	Magnetic coil										

### About Us

KPM is a high quality manufacturer & provider of rugged electrical testing equipment for EHV/HV/LV substations. KPM solutions are known for:

- Best in class specifications
- Unique test approach
- Interference rejection capability

Each equipment is supported by advance service center in Gurgaon backed by a team of expert application & service engineers. KPM aims in bringing highest specification products at the doorstep of Indian customers in best rates.

### Contact Us

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