



Global technology for local needs



**EMPOWERING  
THE POWER  
TRANSFORMERS**

**SUKRUT** was founded in 1967 in India as a pioneer in the field of transformer accessories. Over the years, it established close collaborations with almost every Indian manufacturer of Power Transformers. Therefore, SUKRUT has an excellent understanding of its customers' needs.

Today, we are building on our know-how by deepening our relationships with international partners as well. We cooperate with them to deliver the best product tailored to our customers' needs – especially in India, but also around the world.

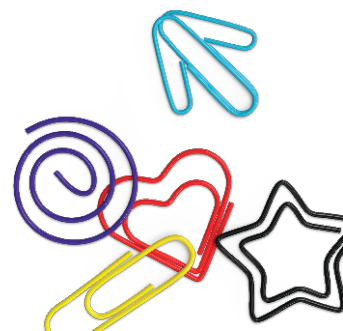
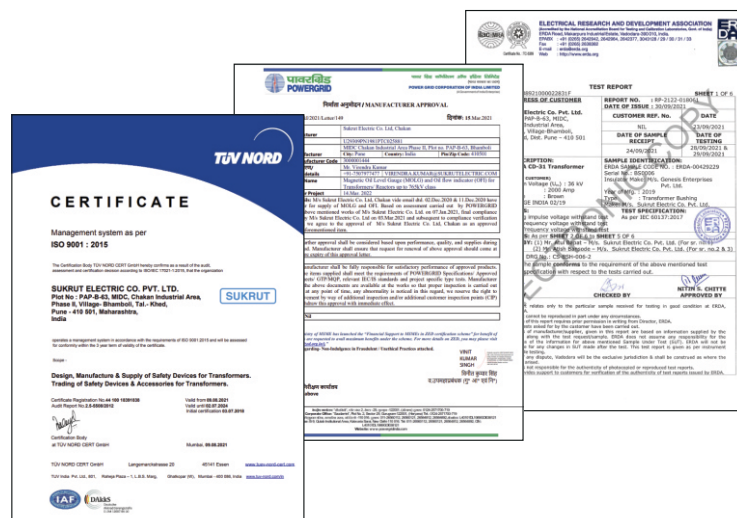
It can be seen that inventive talent and ongoing collaboration with customers and partners are the basis for the sustainability and success of SUKRUT.

## Sukrut at a glance

- Excellent reputation since 1967
- A wide range of cost-efficient solutions for the transformer industry
- Product solutions adaptable to our customers needs
- State-of-the-art product testing and calibration facilities
- Dedicated customer care team for efficient aftersales service

## Processes & Qualifications

SUKRUT, being an ISO 9001:2015 certified company, is a leading manufacturer of transformer accessories in India. SUKRUT believes in rigorous testing of its products before delivering those to its customers. We are India's first accessories market company to receive an approval by the National Grid of India. We continuously upgrade our technology and to ensure quality, we conduct multiple levels of type tests in third party laboratories as well.



## Buchholz Relay

The Buchholz Relay (BR) is used as a protective device sensitive to the effects of dielectric failure inside the transformer

### 1. STANDARD MODEL

- Buchholz Relay as per Indian standard
- Buchholz Relay as per IEC standard

### 2. MOUNTING (PIPE SIZE)

- Suitable for 80 mm (3") NB pipe
- Suitable for 50 mm (2") NB pipe

### 3. CALIBRATION

| Model | Alarm Switch             | Trip Switch           |
|-------|--------------------------|-----------------------|
|       | Gas Volume Range in 'CC' | Surge Value in Cm/Sec |
| 2" BR | 200±100                  | 100±15%               |
| 3" BR |                          | 100/150±15%           |

### 4. CONTACT TYPE

|           |   |
|-----------|---|
| <b>MA</b> | 1 Alarm + 1 Trip (Normally Open)          |
| <b>MG</b> | 1 Alarm + 2 Trips (Normally Open)         |
| <b>ML</b> | 1 Alarm + 1 Trip with changeover contacts |
| <b>MD</b> | 1 Alarm + 1 Trip (Normally Closed)        |

### 5. SPARES & ACCESSORIES

- Plug Socket
- Armored cable
- Copper Tube
- Flexible S.S Hose Pipe

### 6. GENERAL INFO

- IP-67 ingress & C4-M & C5-M corrosion protection
- Every Buchholz Relay is calibrated at factory
- Setting cannot be altered at site



## Gas Collecting Device

Gas Collecting Device (GCD) is an accessory of Buchholz Relay connected to the Buchholz Relays gas collection petcock and is used to collect samples of gas and oil from the Buchholz Relay easily from the ground level.

### 1. MODELS OFFERED

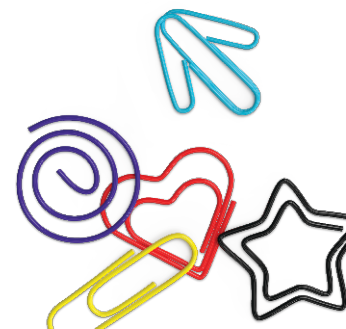
- Gas collecting device with 3 petcocks
- Gas collecting device with 4 petcocks

### 2. SPARES AND ACCESSORIES

- Flexible S.S Hose pipe
- Copper tube

### 3. GENERAL INFO

- IP-67 ingress & C4-M & C5-M corrosion protection



## Flow Indicator

Flow Indicators (FI) are mainly designed as a safety device considering the need for an electrical signal on the failure of forced circulation of liquid in the pipeline.

### 1. LIQUID IN PIPE

Water (WFI) OR Transformer Oil (OFI)

### 2. MOUNTING (PIPE SIZE)

- Size: Round dial 100 mm (4")
- Dial color: Black marking on yellow / white background
- Spread of dial: 70 degrees

### 3. SWITCH

- No. of switches: 1 or 2 max
  - 1 switch for low flow at 70% of full flow
  - 2 switches for low flow at 80% & 70% of full flow
- Setting of switch: Normally open at full flow and closes when rate of flow drops OR as per the requirement



### 4. SPARES & ACCESSORIES

- Plug socket
- Armored cable

### 5. GENERAL INFO

- For suitable model selection, the customer must provide detailed specifications which include: liquid in pipe, size of pipe, rate of full flow and direction of flow required.
- FI with different specifications are not interchangeable
- IP-67 ingress & C4-M & C5-M corrosion protection.

## Pressure Relief Valve

Pressure Relief Valve (PRV) is designed to operate at a predetermined set pressure to protect transformer from high oil pressure build up during fault conditions.

### 1. PORT OPENING

- 150mm nominal diameter

### 2. OPERATING PRESSURE

- 0.28, 0.35, 0.42, 0.49, 0.56, 0.70, 0.80 kg/cm<sup>2</sup>
- 1.4 kg/cm<sup>2</sup>

### 3. SWITCH TYPE

- Limit switch with contacts 1NO + 1NC or 2NO + 2NC

### 4. VISUAL INDICATION OF OPERATION

- Flag provided on 'T' series PRV

### 5. CHANNELIZED DISCHARGE

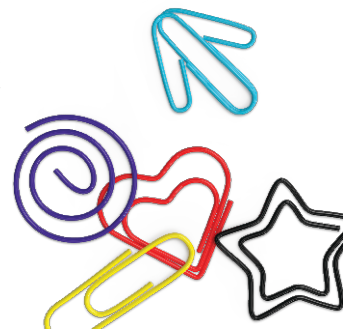
- For oil collection & drain, PRV with shroud can be provide

### 6. SPARES OF ACCESSORIES

- Plug socket
- Armored cable

### 7. GENERAL INFO

- IP-65 ingress & C4-M & C5-M corrosion protection
- Operating pressure is not adjustable at site
- With or without switch option available





## CT Terminal Box

Terminal Box (TBX) is designed to offer an easy, fast and reliable solution for connecting CT wires inside the transformer to external measuring systems.

### 1. MODELS & NUMBER OF TERMINALS

| Model  | No. of terminals |
|--------|------------------|
| SM2-S  | 4, 6, 9, 12      |
| SM2-L  | 15, 18, 24, 36   |
| SM2-XL | 27, 37, 45, 53   |

### 2. NUMBER OF EXITS & CABEL ENTRY SIZE

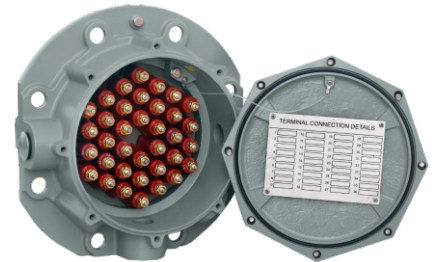
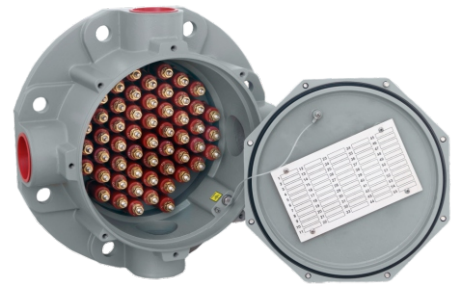
| Model  | No. of exits | Cable Entry Size |
|--------|--------------|------------------|
| SM2-S  | 4            | M25 X 1.5        |
| SM2-L  | 3/5          | M25 X 1.5        |
| SM2-XL | 4            | M50 X 1.5        |

### 3. SPARES & ACCESSORIES ( AT EXTRA COST )

- Cabel Gland ( 2/4 core )
- Bottom Gasket
- Shorting Links

### 4. DEGREE OF PROTECTION

- IP-67 ingress & C4-M & C5-M corrosion protection



## CFT Terminal Box

CFT terminal has been designed to offer an easy, fast and reliable solution for core and frame grounding.

### 1. MODEL & NUMBER OF TERMINAL

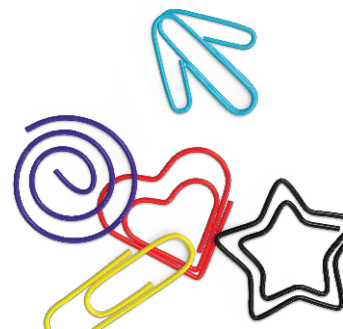
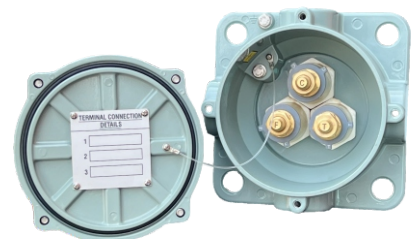
| Model | No. of terminals | No. of Exits | Cable Entry Size |
|-------|------------------|--------------|------------------|
| CFT   | 1                | -            | -                |
|       | 2                | 1            | M25 X 1.5        |
|       | 3                | -            | -                |

### 2. SPARES & ACCESSORIES ( AT EXTRA COST )

- Cabel Gland ( 2/4 core )
- Bottom Gasket
- Shorting Links

### 3. DEGREE OF PROTECTION

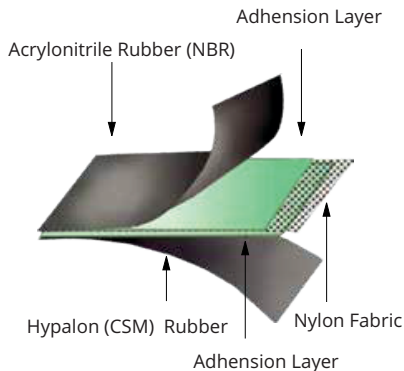
- IP-67 ingress & C4-M & C5-M corrosion protection



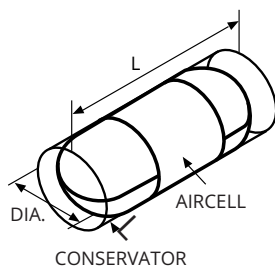
## Aircell

Aircell is designed to act as a barrier to separate undesirable elements in the atmosphere from transformer oil within a conservator.

### 1. AIRCELL FABRIC



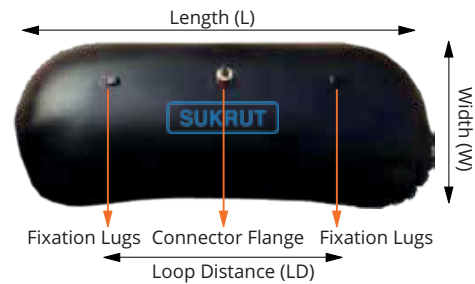
### 2. CONSERVATOR SHAPE: CYLINDRICAL



### 3. SIZE OF AIRCELL

Parameters required for Aircell size:

Internal Length (L), Width (W) & Diameter (D) of conservator or according to conservator shape.



L = Length of the Aircell when flat  
W = Width of the Aircell when flat  
LD = Distance between Fixation Lugs

### 4. ORDERING SPECIFICATION

Every Aircell is unique and is specially made as per customers specification. Thus, once size is confirmed, dimensions of Aircell cannot be changed.

## Conservator Protection Relay

Conservator Protection Relay (CPR) is a protective device specially designed to detect leakage in Aircell by providing electrical signal.

### 1. MODELS OFFERED

- CPR with 1 alarm with normally open/closed contact
- CPR with 1 alarm with changeover contacts

### 2. GAS VOLUME FOR ALARM

- Relay operates with gas displacement  $400 \pm 50\text{cc}$

### 3. WIRING CONTACTS

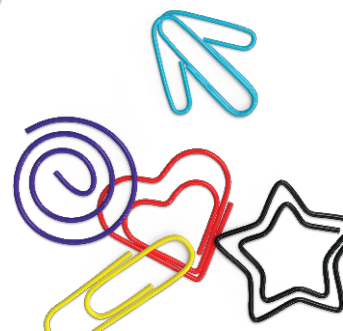
|    |                                  |
|----|----------------------------------|
| ME | 1 Alarm (Normally open)          |
| MT | 1 Alarm with changeover contacts |
| MD | 1 Alarm (Normally closed)        |

### 4. SPARES & ACCESSORIES

- Flexible S.S. Hose pipe
- Copper tube

### 5. GENERAL INFO

- IP-67 ingress & C4-M & C5-M corrosion protection



## Oil Level Indicator

Oil Level Indicator (OLI) is a magnetic analogue device used to indicate the position of insulating oil level in conservator of a transformer.

### 1. CONSERVATOR

- With or without Aircell

### 2. MOUNTING

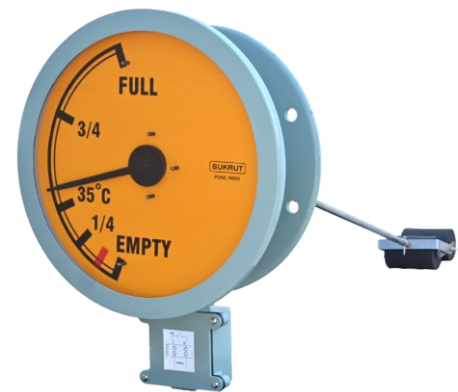
- Mounting on flat end plate cover or on circular wall of conservator
- Vertical or inclined
- Customer has to provide mounting pad on conservator to suite selected model

### 3. DIAL

- Size : Round 250, 150.
- Dial marking : Empty, 1/4, 1/2, 3/4, FULL or any special marking as per requirement
- Dial color : Black marking on yellow / white background

### 4. SWITCH

- 1 OR 2 switch max
- Switch for low oil level



- Switch for low & very low oil level
- Switch for low & high oil level

### 5. MOVEMENT OF FLOAT

- In a plane perpendicular or parallel to dial

### 6. GENERAL INFO

- In order to deliver a suitable model, the customer must provide all the necessary specifications
- OLI with different specifications are not interchangeable
- IP-67 ingress & C4-M & C5-M corrosion protection

## Porcelain Bushing

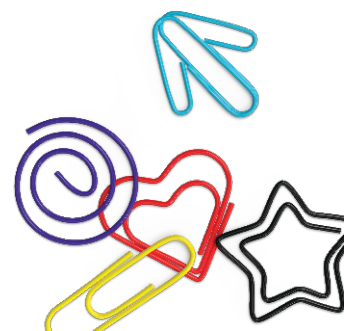
A transformer bushing is an insulating structure that facilitates the passage of an energized, current-carrying conductor through

| S/N | BUSHINGS                  |   |
|-----|---------------------------|---|
| 1   | Maximum rated voltage     | From 12 kV up to 52 kV                  |
| 2   | Maximum rated current     | From 250 A up to 4500 A                 |
| 3   | Nominal creepage distance | From 290 mm up to 1655 mm               |
| 4   | Standard references       | DIN-42533, EN-50180 & IEC-60137         |
| 5   | Rod design                | Rigid stem / Split conductor / Drawlead |

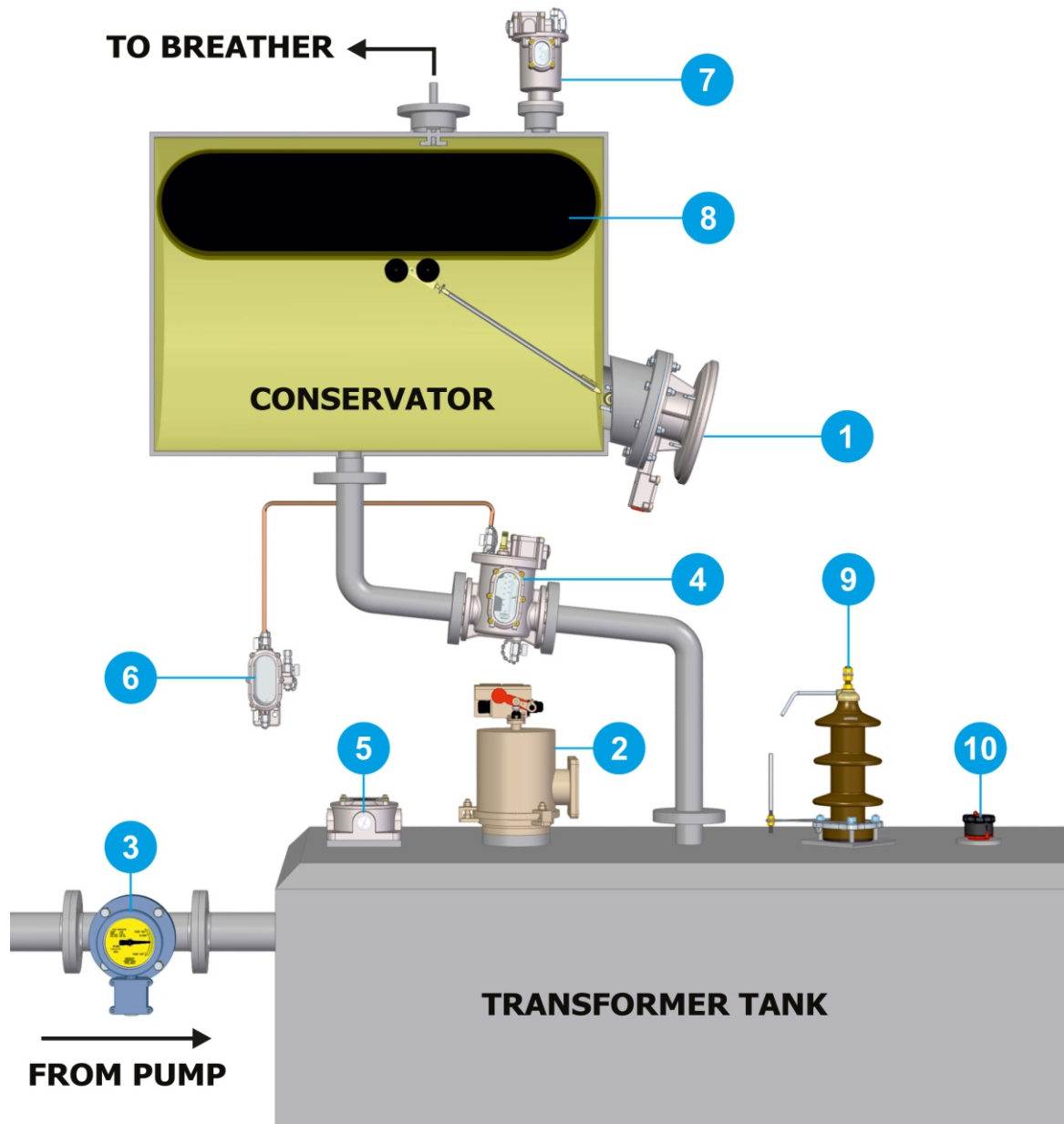


### Note (Applicable across all product range)

There will be commercial implication if Spares & Accessories are ordered.



# All accessories at a glance



- 1 Oil Level Indicator 2 Pressure Relief Valve 3 Flow Indicator 4 Buchholz Relay 5 Terminal Box  
6 Gas Collecting Device 7 Conservator Protection Relay 8 Aircell 9 Bushing 10 De-Energized Tap Changer



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