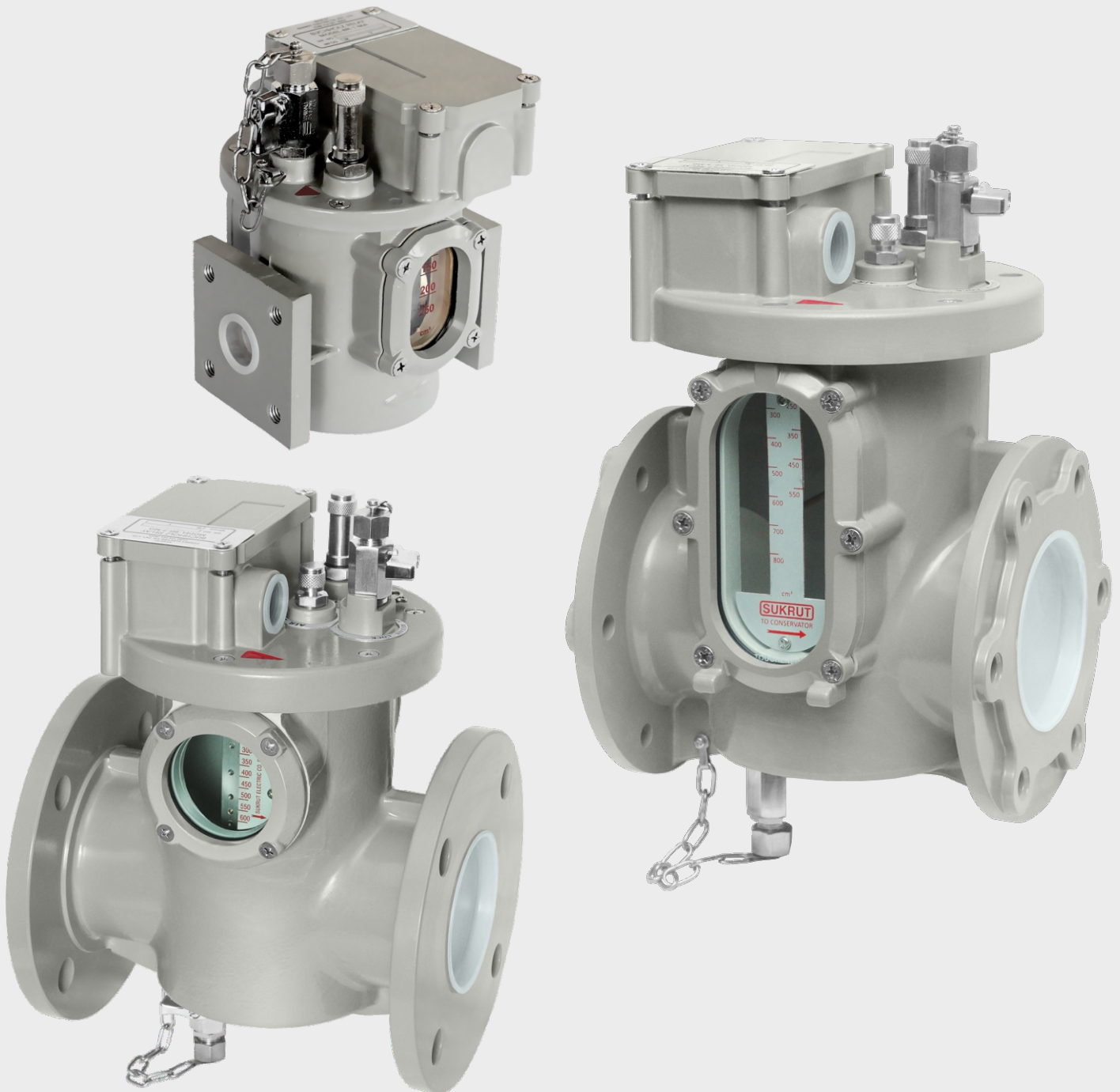


BUCHHOLZ RELAY

FOR OIL FILLED TRANSFORMERS

SUITABLE FOR 25 (1"), 50 (2") & 80MM (3") PIPE SIZE



SUKRUT[®]

Global technology for local needs

www.sukrutelectric.com



TECHNICAL INFORMATION

1.0 APPLICATION :

The **Buchholz Relay** is a safety device which detects abnormal functioning inside a transformer. The working of the relay is based on the fact that any failure of the active part of an oil filled transformer produces gas inside the tank which may cause a surge in oil.

2.0 CONSTRUCTION :

The main body and the cover of buchholz relay are made of leak proof aluminium die casting. It can be installed easily due to integral flanges provided as per IS-3637 (Indian standard) & EN-50216-2 (European Standard) on main body. The volume of the gas collected inside the relay can be seen through graduated inspection toughened glass windows provided on both sides of the main body. The cover of the relay holds two floats & one flap to sense the oil surge. Magnetic reed switches are linked to the swing of two floats. The connection from both switches is brought in the terminal box. A gas release cock with cap and chain & electric circuit test device with cap for manual checking of switches is provided on the cover of the relay. Air injection test device with cap is provided on the cover for checking functioning of switches by pumping air into relay. A drain cock with cap and chain is provided at the bottom of the main body.

3.0 WORKING :

The buchholz relay has a chamber in which gas generated in the tank due to fault gets collected. When the collected gas, exceeds the predetermined volume, the top float goes down thereby operating switch for alarm. Similarly, the switch for trip gets operated when gas continues to accumulate further. The switch for trip also gets operated when surge in oil flow travels from tank to conservator. These switches can be used for initiating safety system to protect / trip the transformer.

4.0 FEATURES :

- 4.1 Light weight. Easy to handle.
- 4.2 Easy to read the volume of gas in relay.
- 4.3 Reliable operation of floats & switches.
- 4.4 Withstands seismic vibrations.
- 4.5 Use of hermetically sealed reed switches.
- 4.6 Taking sample of gas for analysis is easy.
- 4.7 Weather proof terminal box & easy to connect terminals.
- 4.8 Two entries in terminal box for incoming cable. Any one can be used to suit site condition.

5.0 CALIBRATION :

5.1 Alarm switch: Gas volume range.

BR 3	200 to 300 CC
BR 2	175 to 225 CC
BR 1	90 to 160 CC

5.2 Trip switch : Rate of steady flow of oil.

BR 3	90 to 160 cm / sec
BR 2	75 to 140 cm / sec
BR 1	70 to 130 cm / sec

6.0 SPECIFICATIONS :

6.1 Liquid	: Transformer Oil
6.2 Working Temperature	: -10 to 115°C
6.3 Working Pressure	: 0 to 1 kg/cm ²
6.4 Environment	: Indoor or Outdoor
6.5 Ingress Protection	: IP-67
6.6 Corrosion Resistance	: Available in C4-M & C5-M

7.0 MOUNTING :

Depending on pipe line, proper model should be selected. Such BR should be installed in 80 mm (3") or 50 mm (2") or in 25 mm (1") size of pipe line at an inclination as per customer's suitability between 2° to 5°. Maintain the direction of oil flow as per marked arrow on the cover of the BR. Wiring should be done to suite selected model. (See Wiring Diagrams)

8.0 TESTS :

8.1 ROUTINE TESTS

- 8.1.1 Switch operation for Alarm for gas volume.
- 8.1.2 Switch operation for Trip for loss of oil.
- 8.1.3 Switch operation for Trip during surge in oil
- 8.1.4 Static Pr. Test for BR assembly at 2.5 kg/cm² for 24hrs.
- 8.1.5 2 kV Test between terminals & body for 1 Min.

8.2 TYPE TESTS :

- 8.2.1 IP-67.
- 8.2.2 Seismic vibration.
- 8.2.2 All type tests as carries out as per IS-3637.
Type test reports are available upon request.

9.0 WIRING CONTACTS :

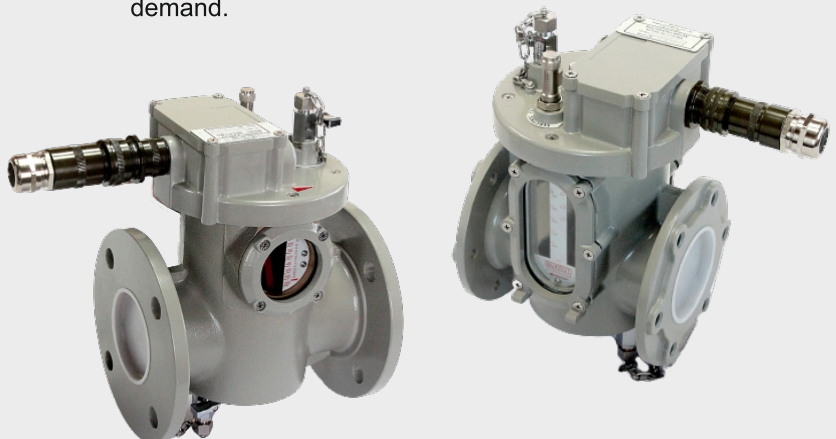
Refer Pg.4 for standard wiring diagrams.

MA	1 Alarm + 1 Trip
MG	1 Alarm + 2 Trip
ML	1 Alarm + 1 Trip with Changeover Contacts
MD	1 Alarm + 1 Trip (Normally Closed)
S4	2 Alarm + 2 Trip

Note : BR-1 is only available in MA & ML model.

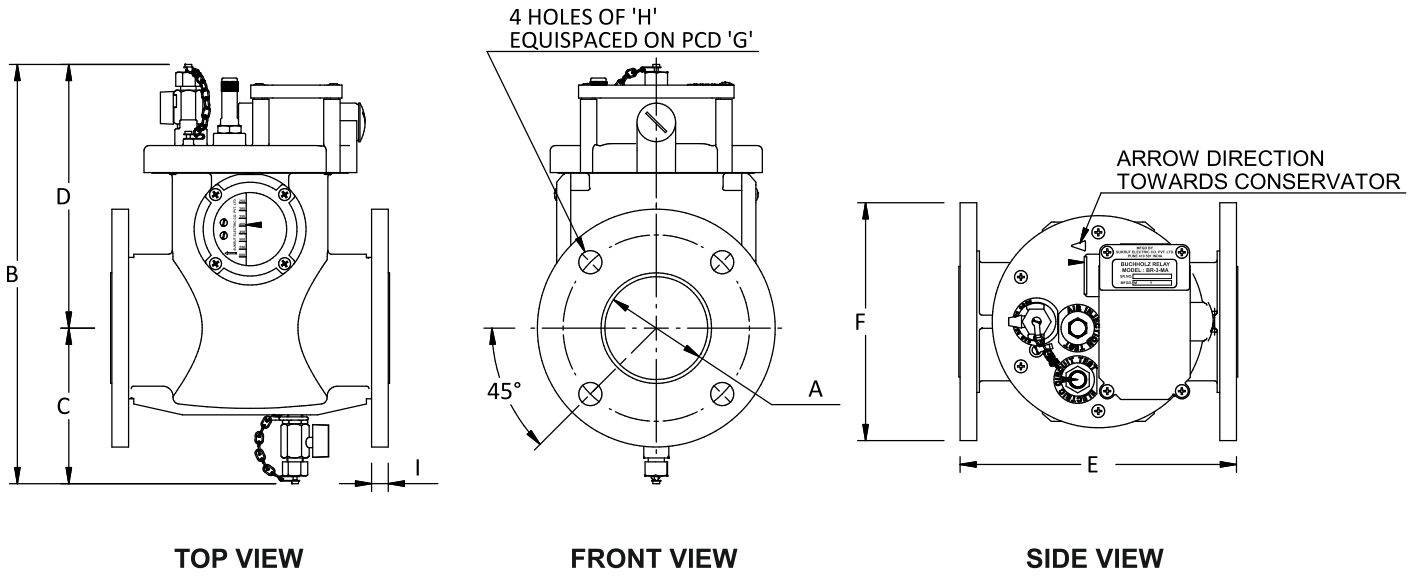
10.0 ACCESSORIES

Buchholz relay can be supplied with plug & socket option on demand.



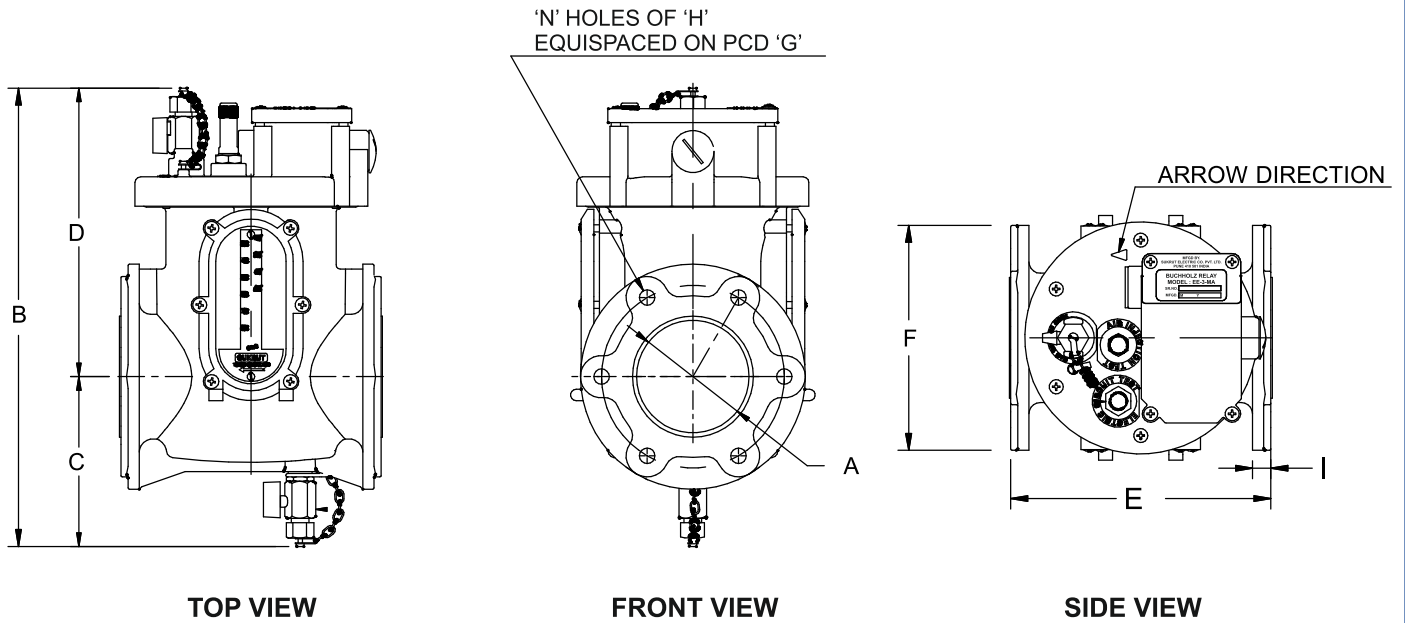
MOUNTING DETAILS

BUCHHOLZ RELAY - BR SERIES - AS PER IS-3637



MODEL	SUITABLE PIPE SIZE : A	B	C	D	E	F	G	H	I
BR-2	50NB	297	116	181	215	150	115	18	13
BR-3	80NB	312	116	196	215	185	145	18	13

BUCHHOLZ RELAY EE & DR SERIES AS PER EN-50216-2

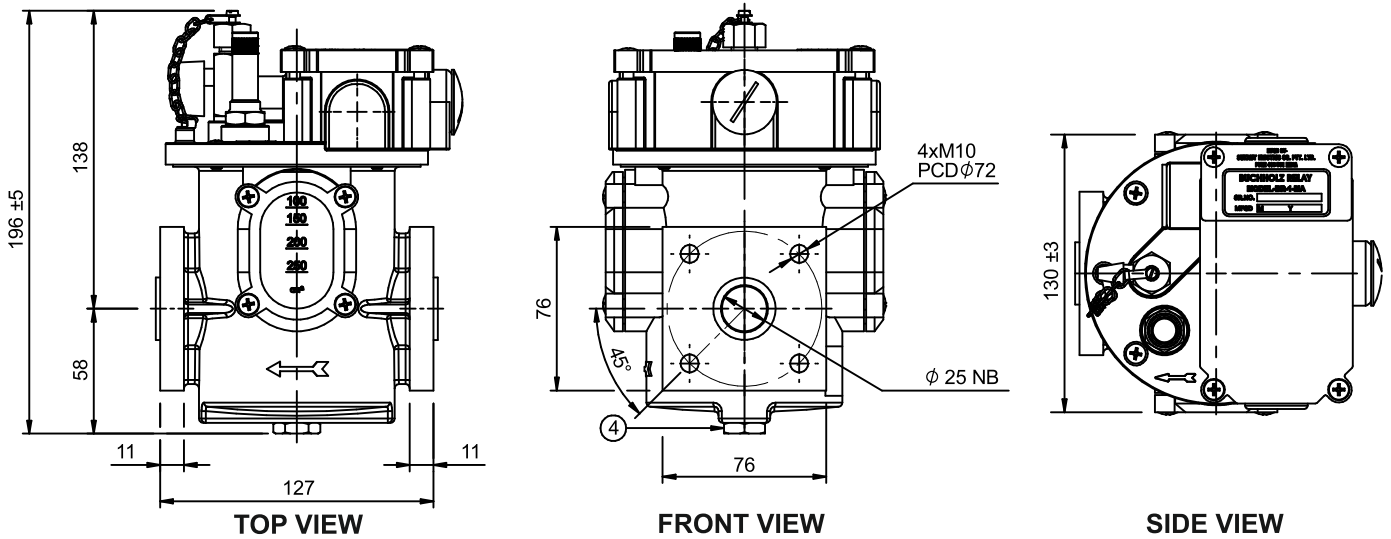


MODEL	SUITABLE PIPE SIZE : A	B	C	D	E	F	G	H	N	I
EE-2	50NB	301	110	191	185	140	110	11	6	15
EE-50	50NB	301	110	191	185	165	125	18	4	15
EE-3	80NB	326	121	205	185	160	130	11	6	15
DR-79	80NB	326	121	205	195	200	160	18	4	18
DR-3	80NB	326	121	205	195	200	160	18	8	18



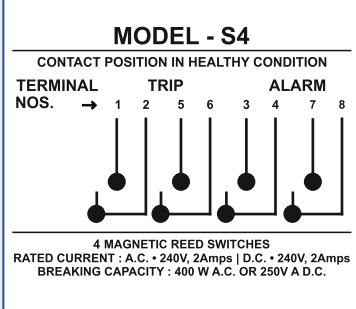
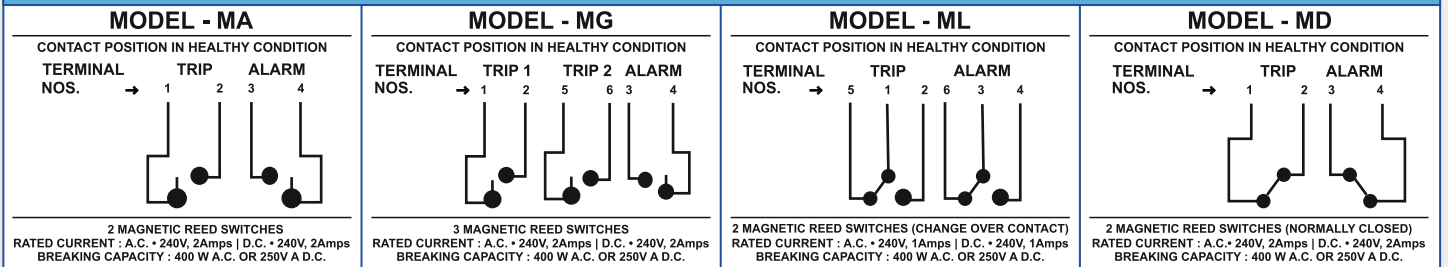
MOUNTING & CONTACT DETAILS

BUCHHOLZ RELAY BR-1 AS PER EN-50216-2



NOTE: MODEL S4 IS NOT AVAILABLE IN BR-1.

STANDARD WIRING DIAGRAM FOR BR MODELS



APPLICATION OF BUCHHOLZ RELAY

Buchholz Relay is mounted at the inclination of 1 to 9 deg. For connection, one entry is closed by brass plug & the other by a dispensable plastic plug. Entry of connecting cable can be made from suitable side & remaining hole can be kept closed by using the brass plug. Suitable cable gland should be provided by buyer of BR.

GENERAL NOTES :

1. Every Buchholz Relay is factory set. Setting cannot be altered at site.
2. If any specific values of Alarm and Trip contact within the limits are required, they must be specified in the Purchase Order.
3. For any Assistance, correspondence must be made by giving reference of Sr. No. of BR.
4. Except mounting dimensions & PCD, other dimensions given in this catalogue are for guidance only. They will not be part of Inspection Schedule.



SUKRUT ELECTRIC CO. PVT. LTD.

Plot No. Pap-B-63, MIDC Chakan Industrial Area Phase - II, Village Bhamboli, Taluka Khed District Pune 410 501, Maharashtra, India.

Mobile : +91 75077 78841 / 75077 78842

Email : marketing@sukrutelectric.com

Web : www.sukrutelectric.com

