

BUCHHOLZ RELAY WITH PLUG SOCKET

MODELS : EE3-PS-MA/MG/ML/MD

EE2-PS-MA/MG/ML/MD

SUITABLE FOR 80 MM (3") & 50 MM (2") NB PIPES

1.0 APPLICATION

The Buchholz Relay (BR) is a control and 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 and/ or causes a surge in oil.

2.0 FEATURES :

- 2.1 Light weight. Easy to handle.
- 2.2 Easy to read the volume of gas in BR.
- 2.3 Reliable operation of floats & switches.
- 2.4 Withstands seismic vibrations due to use of Reed Switches.
- 2.5 Taking sample of gas for analysis is easy.
- 2.6 Ready to connect plug-socket with cable

3.0 CONSTRUCTION :

The main body and the cover of BR are made of leak proof aluminium die casting. The design is very compact. The BR can be installed easily due to integral flanges provided 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 holds two floats & one flap to sense the oil surge. Two Reed Switches (magnetic switches) are linked to the swing of floats. The connection from both switches is brought in the TB with cover. 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 BR. Air injection test device with cap is provided on the cover for checking functioning of switches by pumping air into BR. A drain cock with cap and chain is provided at the bottom of the main body. Leads from the terminal are internally connected to Plug. Matching Socket with cable is provided for cable connections. Thus the BR can be directly connected to the control circuit.

4.0 WORKING :

- 4.1 The BR 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.
- 4.2 Similarly, the switch for Trip gets operated when volume of gas further increase. The switch for Trip also gets operated when a surge hits the flap

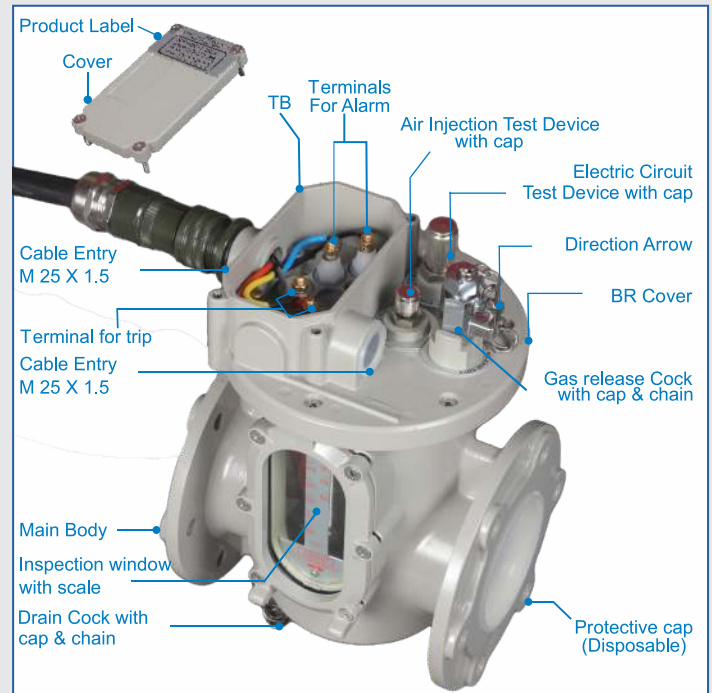
5.0 CALIBRATION :

- 5.1 Alarm switch: Gas Volume Range as per IS-3637

EE3	200 to 300 cc
EE2	175 to 225 CC

- 5.2 Trip Switch : Rate of Steady Flow of Oil as per IS-3637

BE3	90 to 160 cm / sec
BE2	75 to 140 cm / sec



6.0 SPECIFICATIONS :

- 6.1 Liquid : Transformer Oil to IS 335
- 6.2 Working Temperature: -10 to 115°C
- 6.3 Working Pressure : 0 to 1 kg/cm²
- 6.4 Environment : Indoor or Outdoor

7.0 MOUNTING

BR, Models EE3 should be installed in 80 mm (3") & Models EE2 should be installed in 50 mm (2") size of pipe Line.

Inclination of mounting as shown in fig. 6 as per customer's design. Maintain the direction of oil flow as per marked arrow on the cover of the BR.

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 24 hrs.
 - 8.1.5 2KV Test between terminals & body for 1 Min.
- A test certificate is issued for each BR.

8.2 TYPE TESTS :

- 8.2.1 IP 67 Test carried out at IDEMI Mumbai
 - 8.2.2 All Type Tests as per IS 3637 carried out at ERDA, Vadodara.
 - 8.2.3 Seismic Vibration Test at ARAI, Pune.
- Type test reports are available on request.

9.0 HOW TO ORDER :

Select the suitable model from our drawing CS-BR-EE3-PS-02 & CS-BR-EE2-PS and place purchase order.

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)



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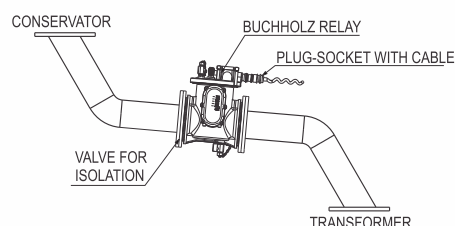
FIG 1.

PART LIST FOR FIG. 1

SR NO.	DESCRIPTION	MATERIAL	QTY
1.	DRAIN COCK 1/4" BSP WITH CAP & CHAIN	BRASS	1
2.	PROTECTION CAP	PLASTIC	2
3.	RELAY BODY	ALUMINIUM	1
4.	INSPECTION WINDOW WITH SCALE	GLASS	2
5.	COVER FOR BR	ALUMINIUM	1
6.	PLUG SOCKET WITH CABLE	-	1
7.	TERMINAL BOX COVER	ALUMINIUM	1
8.	ELECTRIC SWITCH TESTING DEVICE WITH CAP	BRASS	1
9.	GAS RELEASE COCK 1/4" BSP WITH CAP & CHAIN	BRASS	1
10.	PLAIN PLUG FOR CABLE ENTRY	PLASTIC	1
11.	AIR INJECTION TEST DEVICE WITH CAP	BRASS	1
12.	LABEL - SR.NO. & MODEL PLATE	ALUMINIUM	1

HARDWARE AND GASKETS ARE NOT SUPPLIED BY SUKRUT

FIG 6. APPLICATION OF BUCHHOLZ RELAY



MOUNTING DIMENSIONS

REFERENCE	SUITABLE PIPE SIZE : A	B	C	D	E	F	G	H	I
1	50 MM NB	282	102	180	185	140	110	11	13
2	80 MM NB	309	113	196	185	160	130	11	13

STANDARD WIRING DIAGRAM FOR BR MODELS

<p>FIG 2. MODEL - PS-MA CONTACT POSITION IN HEALTHY CONDITION</p> <p>2 MAGNETIC REED SWITCHES WITH 4 TERMINALS (NORMALLY OPEN) RATED CURRENT : A.C. • 240V, 2Amps D.C. • 240V, 2Amps</p>	<p>FIG. 3. MODEL - PS-MD CONTACT POSITION IN HEALTHY CONDITION</p> <p>2 MAGNETIC REED SWITCHES WITH 4 TERMINALS (NORMALLY CLOSED) RATED CURRENT : A.C. • 240V, 2Amps D.C. • 240V, 2Amps</p>	<p>FIG. 4. MODEL - PS-MG CONTACT POSITION IN HEALTHY CONDITION</p> <p>3 MAGNETIC REED SWITCHES WITH 6 TERMINALS (NORMALLY OPEN) RATED CURRENT : A.C. • 240V, 1Amps D.C. • 240V, 1Amps</p>	<p>FIG. 5. MODEL - PS-ML CONTACT POSITION IN HEALTHY CONDITION</p> <p>2 MAGNETIC REED SWITCHES WITH 6 TERMINALS (NORMALLY OPEN) RATED CURRENT : A.C. • 240V, 2Amps D.C. • 240V, 2Amps</p>
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GENERAL NOTES :

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



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