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DESIGN DETAILS

1.0	General		
1.1	Type Designation		
1.2	Governing Standard	IEC 62271-100 / IS 13118 (1991)	
2.0	Technical Data		
2.1	System Parameters		
.1	Rated Voltage	kV	245 kV
.2	Frequency	Hz.	50
.3	No. of Poles		Three
.4	Ambient Temperature Range	<sup>o</sup> C	-30 to +50
3.0	Operating Data		
3.1	Type of Operating Mechanism	Spring Energy Stored	
3.2	Mechanism is electrically gang operated	Yes	
3.3	Operating Data		
.1	Closing	mSec.	62 ± 6
.2	Breaking	mSec.	60 max
.3	Opening Time	mSec.	37(max)( rated voltage)
.4	Arcing Time	mSec.	≤20
3.4	Switching Data		
.1	Rated normal current	A	3150
.2	Rated short circuit breaking current	kA	40
.3	Rated short time current	kA	40, (3sec.)
.4	Rated short circuit making current	kAp	100
.5	First pole to clear factor		1.3
.6	Out-of-phase breaking current	kA	10
.7	Rated line charging breaking current	A	125
.8	Rated cable charging breaking current	A	250
3.5	Rated operating sequence	O - 0.3sec - CO - 3min - CO	
4.0	Basic Insulation Level		
4.1	Rated power frequency withstand voltage (1min, 50 Hz)		
.1	Phase to earth	kV	460

Client : Bihar Power Transmission Company Ltd.

Project :

				Item No :	Qty : 10x
			Date:	Description:- 245kV, 40kA, 3150A,SF6 CB	Sh. 1
			Prep :		
			Ckd :		
				Work :-	4 Sh.
Issue	Remarks	Date	Name	Details :- DESIGN DETAILS	
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.2	Across the open breaker	kV	460
.3	Between phases	kV	460
4.2	Rated lightning impulse withstand voltage (1.2 / 50 micro sec.)		
.1	To earth	kVp	1050
.2	Across the open breaker	kVp	1050
.3	Between phases	kVp	1050
4.3	Creepage distance		
.1	To earth	mm	6125mm or 25 mm/kV Minimum
.2	Across the open breaker	mm	6125mm or 25 mm/kV Minimum
.3	Insulator type		Combination shed
5.0	Construction		
5.1	Clearance		
.1	To earth	mm	2400
.2	Across the open breaker	mm	1900
.3	Phase to phase	mm	4000
.4	Pole to pole center distance	mm	4415
5.2	Arc quenching Medium		
.1	Nominal pressure SF6 (@20°C)	bar	6.0 rel.
.2	Signal loss of SF6 (@20°C)	bar	5.2 rel.
.3	General lockout (@20°C)	bar	5.0 rel.
.4	Quantity of SF6 gas required per pole of breaker	kg	7.3
.5	Breaker Poles (3nos.) will be pre filled with transport pressure of 0.5 Bar gauge.	kg	3
.6	Gas being supplied per breaker	kg	20
5.3	Installation		Outdoor
5.4	Approx. weight of breaker.	kg	3000 approx.
6.0	Structures		
6.1	Material		Mild Steel
6.2	Surface Treatment		Hot Dip Galavanised
7.0	Base Frame		
7.1	Material		Mild Steel
7.2	Surface Treatment		Hot Dip Galvanized
8.0	Control Cubicle		

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- 8.1 Construction
- |    |                                   |    |                             |
|----|-----------------------------------|----|-----------------------------|
| .1 | Material of enclosure             |    | CR Sheet Steel              |
| .2 | Thickness of sheet steel          | mm | 2.5                         |
| .3 | Painting for control cubicle      |    | Epoxy / Polyester paint     |
| .4 | External shade                    |    | RAL 7032                    |
| .5 | Degree of protection of enclosure |    | IP 55                       |
| .6 | Padlocking facility for cubicle   |    | Provided                    |
| .7 | Glass window to see spring status |    | Provided on control cubicle |
- 8.2 Wiring
- |    |                |  |                                       |
|----|----------------|--|---------------------------------------|
| .1 | Control wiring |  |                                       |
| .1 | Size           |  | 2.5 sq. mm, flexible copper conductor |
| .2 | Insulation     |  | Grey 1100V Grade                      |
| .2 | Earth Wiring   |  |                                       |
| .1 | Size           |  | 2.5 sq. mm, flexible copper conductor |
| .2 | Insulation     |  | Yellow Green 1100V Grade              |
- 8.3 Control Terminals
- |    |                        |                 |             |
|----|------------------------|-----------------|-------------|
| .1 | Type                   |                 | Stud type   |
| .2 | Make                   |                 | Connectwell |
| .3 | Size                   | mm <sup>2</sup> | 4           |
| .4 | Spare unwired terminal | %               | 20          |
- 8.4 Auxiliary Supply

Circuit	Rated Voltage	Source	Range
Spring Charging Motor	240V AC	External	85 - 110%
Closing Coil	220V DC	External	85 - 110%
Trip Coil - 1 & 2	220V DC	External	70 - 110%
Space Heater / Socket / Illumination	240V AC	External	--

Spare:

Terminal connector-Terminal connector suitable for single ACSR Zebra

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