Eskom ERTD DEPARTMENT	ESKOM RESEARCH, TESTING AND DEVELOPMENT	REFERENCE CPS-VT-2011HVH
	TEST CERTIFICATE	DATE 31-07-2012

TEST CERTIFICATE AS SUPPLIED BY THE KOEBERG INSULATOR POLLUTION TEST STATION (KIPTS) FOR THE EVALUATION OF AN INSULATOR PRODUCT

ISSUED BY	SUPPORTED BY
Dr WL VOSLOO (CORPORATE CONSULTANT HIGH VOLTAGE ENGINEERING)	G STRELEC (CHAIRMAN DISTRIBUTION INSULATOR WORK GROUP)

To whom it may concern

Product Code: VTOP 2-24, Drawing: EG.40014/04 , Rev: 0 - Date: 01-05-2011

Product Type: MV Voltage Transformer

This is to certify that the above insulation product, as manufactured by CPS Consultants & Energo Group Engineering Division and tested by CPS Consultants & Energo Group Engineering Division, has passed the light-to-medium pollution test (winter cycle) and has passed the heavy-to-very-heavy pollution test (summer cycle). The unit has been energised for the period May 2011 to April 2012 at the Koeberg Insulator Pollution Test Station (KIPTS), South Africa.

Tests have been performed in accordance to the Eskom specification DISSCABI8 rev 2 and Eskom test procedure 34-224 Rev 0 & 34-217 Rev 0. This test certificate renders the 22 kV (U_n) insulation product fit for use in an inland non-coastal environment and fit for use in a coastal environment.

Acceptance criteria	Result		Comment
	L-M	H-VH	
No more than three over-current trip-outs (750 mA Mace fuse blown)	Pass	Pass	None
No signs of material erosion deeper than 2 mm	Pass	Pass	Erosion beginning around pin during the heavy to very heavy pollution test cycle.
No signs of tracking in the material	Pass	Pass	None
No signs of punctures or cracks in the material	Pass	Pass	None
No signs of corrosion that has exposed the base metal or can lead to failure of hardware	Pass	Pass	None
Material analysis completed			No

Note: The test data and results are available on CD: TEST_DATA_CPS-VT-2011

Manufacturer		CPS Consultants & Energo Group Engineering Division
Reference Number		CPS-VT
Product Code		VTOP 2-24
Product		MV Voltage Transformer
System Voltage		22
Material		Epoxy
p = Plain; ur = Under-ribbed		p
c = Coastal; i = Inland		c
Minimum distance between sheds	mm	18
Overall insulator length	mm	400
Shed 1 diameter	mm	120
Shed 2 diameter	mm	107
Core diameter – Top	mm	34
Core diameter – Bottom	mm	74
No of large sheds		4
No of small sheds		2
Shed spacing	mm	26
Creepage from top to first shed	mm	Measured
Creepage per shed/shed pairs	mm	
Creepage from bottom to last shed	mm	
Creepage betw 2 pnts	mm	
Straight air dist betw 2 pnts on insulator	mm	18
Creepage Distance	mm	787
Arcing distance	mm	385
Shed angle – α	°	15
Shed angle – β	°	0
Specific creepage	mm/kV	33
Shed projection, large	mm	43
Shed projection, small	mm	37
Shed spacing/projection ratio		0.6
Creepage/clearance ratio		0.0
Alternating Shed variance	mm	7
Creepage Factor		1.0
Profile Factor		

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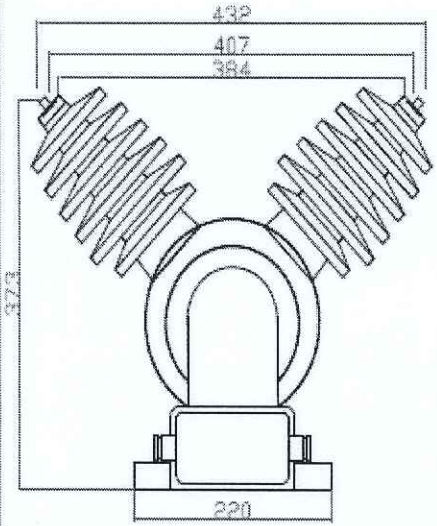
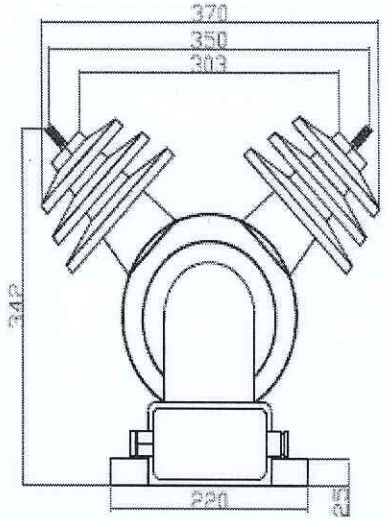


creepage distanc >33kV/mm for 24kV

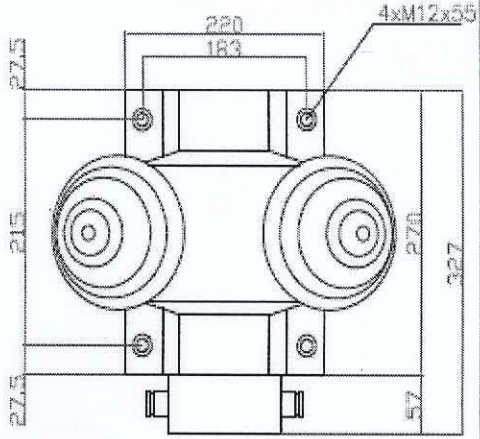
Type: VTOPs 2–24



creepage distanc 25kV/mm for 24kV

creepage distanc >33kV/mm for 7,2kV,12kV,15kV

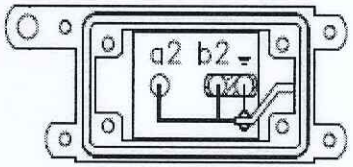
Type: VTOP 2–7.2/12/15/24



Sistem voltage[kV]:	up to 24kV
Primary voltage[kV]:	up to 23kV
Secondary voltage[V]:	up to 240
classe [%]:	0.2/0.5/ 1/ 3
Burden [VA]:	25/50/100/200
max.thermal burden [VA]:	400
weight [kg]:	31

SECONDARY BOX

ground antena for RTU



DIMENSIONS ARE IN [mm]

Tested by		Drawn	J Gancho	DATE	1/5/2011	CPS Consultants PTY & Energo Group ENGINEERING DIVISION Electrical project department	VOLTAGE TRANSFORMER DRY INSULATED TWO–PHASE	EC.40014/04
As marked		Checked by	J Gancho	REVISION	DESCRIPTION			
CHANGED WITH		Standardised	J Gancho					
CHANGED BY		P=	M: 1:1	BOOK No	COPY No	ENCLOSURE No	VTOP 2– X	SHEETS 1 SHEET 1

SUPPORTED BY

G STRELEC

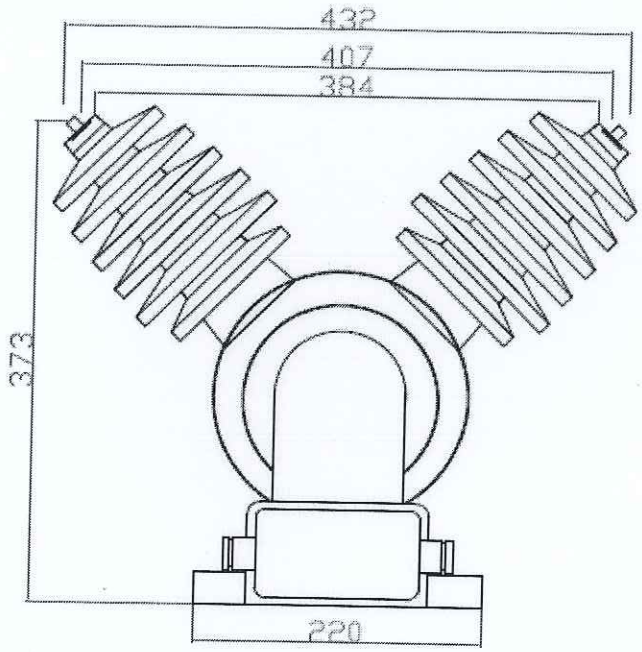
(CHAIRMAN DISTRIBUTION INSULATOR WORK GROUP)

ISSUED BY

Dr WL VOSLOO

(CORPORATE CONSULTANT HIGH VOLTAGE ENGINEERING)

CPS Consultants PTY & Energo Group ENGINEERING DIVISION Electrical project department	VOLTAGE TRANSFORMER DRY INSULATED TWO–PHASE VTOP 2– X
DATE: 1/5/2011	
REVISION DESCRIPTION	
BOOK No / COPY No / ENCLOSURE No	



creepage distanc >33kV/mm for 24kV

Type: VTOPs 2–24

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