



1. H.V. Bushings EN 50180 24kV, 250A
2. L.V. Bushings EN 50386 1kV, 250A
3. Flag with two holes DIN 43675
4. Movable rating plate
5. Neutral to earthing terminal
6. Oil drain valve
7. Lifting lugs
8. Electrical connection tank-cover
9. Petersen coil tap changer
10. Filling tube
11. Earthing terminal
12. Oil level indicator

kVA	A	B	C	e	k		n		Oil volume (l)	Total mass (kg)	CNT 50-20,5-E
					H.V.	L.V.	H.V.	L.V.			
50	1100	930	1400	520	270	105	385	190	400	1450	

DIMENSIONAL DRAWING

Note: Drawing is not to scale.



Three-phase oil-immersed hermetically sealed
distribution transformer with Petersen coil
50kVA, 20.5/0.41kV, ZNzn0, 5-15A, 5min

Offer No. **P21-051**
Drawing No. **MS-2151**
Version **1.0**
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TECHNICAL DATA FOR OFFER

1.	Manufacturer	KKM Power d.o.o, Serbia				
2.	Transformer type	Oil-immersed, hermetically sealed				
3.	Product kind	Distribution transformer and Petersen coil within the same tank				
4.	Standard	In accordance with all standards stated in ELENIA tender technical specification Version A 19.04.2021.				
5.	Product name	CNT 50-20,5-E				
TRANSFORMER DATA						
6.	Rated power	[kVA]	50			
7.	Number of phases		3			
8.	Rated frequency	[Hz]	50			
9.	Highest voltage of equipment	[kV]	24			
10.	Insulation level	[kV]	LI 125 AC 50 / LI 0 AC 3			
11.	Rated primary voltage	[kV]	20.5			
12.	Regulation on primary side	Yes/No	No			
13.	Rated secondary voltage	[kV]	0.41			
14.	Connection group		ZNzn0			
15.	No-load losses	[W]	90			
16.	Load losses at 75°C	[W]	1100			
17.	Impedance voltage at 75°C	[%]	4			
18.	Sound power level	[dB(A)]	39			
19.	Voltage drop and efficiency	[%]	Load=0.25		Load=0.5	
			cos ϕ = 0.8 ind	cos ϕ = 1	cos ϕ = 0.8 ind	cos ϕ = 1
			0.95	0.56	1.89	1.12
			98.9563	99.1633	98.8417	99.0712
			Load=0.75		Load=1.0	
			cos ϕ = 0.8 ind	cos ϕ = 1	cos ϕ = 0.8 ind	cos ϕ = 1
			2.83	1.68	3.77	2.26
			98.5247	98.8163	97.1109	97.6753

PETERSEN COIL DATA

20.	Rated voltage	[kV]	20.5/√3
21.	Rated current (rated current duration: ≤5min)	[A]	5
			7.5
			10
			12.5
			15

COMBINED DATA OF TRANSFORMER AND PETERSEN COIL

22.	Tap position	Rated short-time neutral current [A]	Rated compound zero-sequence impedance [Ω]
	1	5	2367
2	7.5	1578	
3	10	1184	
4	12.5	947	
5	15	789	
23.	Rated short-time neutral current duration	[min]	≤5
24.	R ₀ /X ₀ ratio at 75°C for each tap	[%]	< 2.5
25.	Non-linearity up to 1.1xU _r (U _r =20.5/√3kV)	[%]	< 2.0
26.	Type of cooling		ONAN
27.	Installation altitude	[m]	<1000
28.	Installation conditions		Indoor / Outdoor
29.	Winding material	Cu / Al	Al
30.	Thermal class of insulation		A
31.	Maximum / minimum temperature of ambient The lowest cold start energizing temperature	[°C]	40 / -40 -30
32.	Maximum temperature rise of winding • during nominal operation • after 5min fault usage	[K]	65
			80
33.	Maximum temperature rise of oil • during nominal operation • after 5min fault usage	[K]	60
			75
34.	Surface treatment		Hot dip galvanizing or painting according to EN ISO 12944-2 class C3 or C4



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35.	Maximum length of product	[mm]	1100
36.	Maximum width of product	[mm]	930
37.	Maximum height of product	[mm]	1400
38.	Maximum oil volume in product (T=20°C, p=1atm)	[l]	400
39.	Maximum total mass of product	[kg]	1450
ACCESSORIES			
40.	HV terminals	Porcelain bushings (EN 50180: 24kV, 250A)	
41.	LV terminals	Porcelain bushings (EN 50386: 1kV, 250A) + flags with two holes (DIN 43675)	
42.	Reactor tap changer	Standard, off load	
43.	Oil level indicator	Standard, for hermetically sealed tank	
44.	Oil drain valve	Standard	