



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 200-20,5-E
					H.V.	L.V.	H.V.	L.V.			
200	1500	1090	1800	520	270	120	385	245	750	2900	

## DIMENSIONAL DRAWING

Note: Drawing is not to scale.



Three-phase oil-immersed hermetically sealed  
distribution transformer with Petersen coil  
200kVA, 20.5/0.41kV, ZNzn0, 5-15A, 5min

Offer No. **P21-051**  
Drawing No. **MS-2152**  
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	<b>CNT 200-20,5-E</b>																																	
<b>TRANSFORMER DATA</b>																																			
6.	Rated power	[kVA]	200																																
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]	250																																
16.	Load losses at 75°C	[W]	2750																																
17.	Impedance voltage at 75°C	[%]	4																																
18.	Sound power level	[ dB(A)]	46																																
19.	Voltage drop and efficiency	[%]	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Load=0.25</th> <th colspan="2">Load=0.5</th> </tr> <tr> <th>cosφ= 0.8 ind</th> <th>cosφ= 1</th> <th>cosφ= 0.8 ind</th> <th>cosφ= 1</th> </tr> </thead> <tbody> <tr> <td>0.84</td> <td>0.35</td> <td>1.69</td> <td>0.71</td> </tr> <tr> <td>98.9563</td> <td>99.1633</td> <td>98.8417</td> <td>99.0712</td> </tr> <tr> <th colspan="2">Load=0.75</th> <th colspan="2">Load=1.0</th> </tr> <tr> <th>cosφ= 0.8 ind</th> <th>cosφ= 1</th> <th>cosφ= 0.8 ind</th> <th>cosφ= 1</th> </tr> <tr> <td>2.53</td> <td>1.07</td> <td>3.38</td> <td>1.45</td> </tr> <tr> <td>98.5247</td> <td>98.8163</td> <td>98.1595</td> <td>98.5222</td> </tr> </tbody> </table>	Load=0.25		Load=0.5		cosφ= 0.8 ind	cosφ= 1	cosφ= 0.8 ind	cosφ= 1	0.84	0.35	1.69	0.71	98.9563	99.1633	98.8417	99.0712	Load=0.75		Load=1.0		cosφ= 0.8 ind	cosφ= 1	cosφ= 0.8 ind	cosφ= 1	2.53	1.07	3.38	1.45	98.5247	98.8163	98.1595	98.5222
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**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 <sub>0</sub> /X <sub>0</sub> ratio at 75°C for each tap	[%]	< 2.5
25.	Non-linearity up to 1.1xU <sub>r</sub> (U <sub>r</sub> =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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23.	Maximum length of product	[mm]	1500
24.	Maximum width of product	[mm]	1090
25.	Maximum height of product	[mm]	1800
26.	Maximum oil volume in product (T=20°C, p=1atm)	[l]	750
27.	Maximum total mass of product	[kg]	2900
<b>ACCESSORIES</b>			
28.	HV terminals	Porcelain bushings (EN 50180: 24kV, 250A)	
29.	LV terminals	Porcelain bushings (EN 50386: 1kV, 630A) + flags with two holes (DIN 43675)	
30.	Reactor tap changer	Standard, off load	
31.	Oil level indicator	Standard, for hermetically sealed tank	
32.	Oil drain valve	Standard	