

**TTH**  
**TRANS TECH HANDELS-GMBH**  
A. d. Schleifmuehle 37  
28203 Bremen – Germany

**SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS**  
**5 MVA 33/11 KV TRANSFORMER**

1.	Brand Name	<b>TTH- Trans Tech Handels GmbH</b>
2.	Services	Outdoor
3.	KVA Rating	
	(a) H.V. Winding	5000
	(b) L.V. Winding	5000
4.	Rated Voltage	
	(a) H. V. Winding	33000 Volts
	(b) L.V. Winding	11000 Volts
5.	Rated frequency	50 Hz
6.	Number of phases	Three
7.	Connection	
	(a) H.V. Winding	Delta
	(b) L.V. Winding	Star
8.	Connections Symbol-Vector Group	
	HV – LV	Dyn11
9.	Tapings	
	(a)Range	+7.5% to – 7.5%
		(Off circuit Tap changer)
	(b) Number of steps	6 steps of 2.5% each
	(c ) For high voltage variation	Yes
10.	Max. Ambient air temp.	55°C
11.	Type of cooling	ONAN
12.	Temperature rise of	
	(a) Top oil by thermometer	50°C
	(b) Winding by resistance	55°C

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13.	Total losses at rated voltage at principal tapping and rated frequency	40.5 KW
14.	Component losses	
	(a)No load loss at rated voltage at principal tapping and at rated frequency	6.5 KW
	(b)Load loss at rated current at principal tapping at 75° C	34 KW
15.	% Impedance voltage at rated current for the principal tapping H.V. – L.V.	7.15%
16.	Insulation level	
	a.Separate Source Power frequency voltage withstand	
	(i)H.V. Winding	70 KV rms
	(ii)L.V. Winding	28KV rms
	b.Induced over voltage withstand	
	(i)H.V.Winding	66 KV rms
	(ii)L.V.Winding	22 KVrms
	c.Full wave lightning impulse withstand voltage	
	(i) H.V. Winding	170 KV(P)
	(ii)L.V. Winding	75 KV(P)
17.	Terminal arrangement	
	(i) High Voltage	Outdoor bushings
	(ii) Low Voltage	Cable box bushings
18.	Reference standard	BS 171/IEC60076