Base Load Power Hub (BLPH)

Technical Data Sheet (TDS) for 66/6.9 kV Power Transformers

Document Number: 123A90-DDL-EL-DS-20002

Document Class: 2

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Rev.	Date	Description	Prepared	Reviewed	Approved

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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ACCEPTED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	
2.	
3.	
4.	

Data Sheet for Transformer: TR-100AD1 - 7 MVA

JIP33
JOINT INDUSTRY PROGRAMME

Revision history

VERSION	DATE	PURPOSE
1,0	December 2020	Issued for Use

Acknowledgements

This IOGP Specification was prepared by a Joint Industry Programme 33 Standardization of Equipment Specifications for Procurement organized by IOGP with support by the World Economic Forum (WEF).

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Data Sheet for Transformers

Foreword

This specification was prepared under Joint Industry Programme 33 (JIP33) "Standardization of Equipment Specifications for Procurement" organized by the International Oil & Gas Producers Association (IOGP) with the support from the World Economic Forum (WEF). Companies from the IOGP membership participated in developing this specification to leverage and improve industry level standardization globally in the oil and gas sector. The work has developed a minimized set of supplementary requirements for procurement, with life cycle cost in mind, resulting in a common and jointly agreed specification, building on recognized industry and international standards.

Recent trends in oil and gas projects have demonstrated substantial budget and schedule overruns. The Oil and Gas Community within the World Economic Forum (WEF) has implemented a Capital Project Complexity (CPC) initiative which seeks to drive a structural reduction in upstream project costs with a focus on industry-wide, non-competitive collaboration and standardization. The CPC vision is to standardize specifications for global procurement for equipment and packages. JIP33 provides the oil and gas sector with the opportunity to move from internally to externally focused standardization initiatives and provide step change benefits in the sector's capital projects performance.

This specification has been developed in consultation with a broad user and supplier base to realize benefits from standardization and achieve significant project and schedule cost reductions.

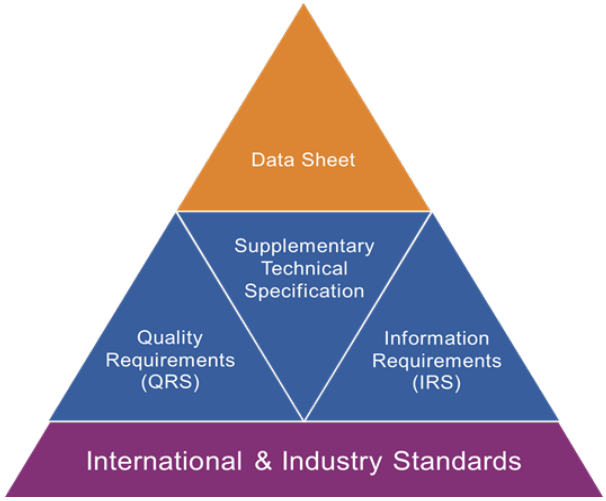
The JIP33 work groups performed their activities in accordance with IOGP's Competition Law Guidelines (November 2014).

Data Sheet for Transformers

Introduction

The purpose of this equipment data sheet is to define purchaser specific requirements for the procurement of transformers in accordance with IOGP S-720 for application in the petroleum and natural gas industries. The data sheet provides project specific requirements where the supplementary specification and its parent standard require the purchaser to define an application specific requirement. It also includes information required by the purchaser for technical evaluation purposes. Additional purchaser supplied documents are also listed in the data sheets, to define scope and technical requirements for enquiry and purchase of the equipment.

This data sheet shall be used in conjunction with the supplementary requirements specification (IOGP S-720), information requirements specification (IOGP S-720L) and quality requirements specification (IOGP S-720Q) which together comprise the full set of specification documents. The Introduction section in the supplementary requirements specification provides further information on the purpose of each of these documents and the order of precedence for their use.



JIP33 Specification for Procurement Documents
Data Sheet

Row		S-720D Data Sheet for Transformers				Issue
2	Tag No. :	*TR-100AD1*				01
3	Service :	*66/6.9 kV, 7MVA Power Transformer*				01
4	Ref. Clause	Description			Additional notes	
5		**1. General**				
6		Manufacturer :	MF Trasformatori srl			01
7		Vendor :	MF Trasformatori srl			01
8		Equipment identifier :	TR-100AD1			
9		Quantity :	1			
10	9,3	Type of liquid preservation system :	conservator with bladder or diaphragm type			01
11	4.1, 5.7.1, A.1.1 a) to x)	Service :	Distribution transformer			
12		Conformity assessment system :	D			
13		**2. Environmental conditions**				
14	5.5, A.1.1a) to x)	Altitude (if more than 1000m or 3280ft) :	not more than 1000 m	m		
15	4.2 a) to e), 4.2 f, A.1.1 a) to x)	Minimum ambient temperature :	-8,4	°C		
16	4.2 a) to e), 4.2 f , A.1.1 a) to x)	Maximum ambient temperature :	25	°C		
17	4.2 a) to e), A.1.1 a) to x)	Yearly average ambient temperature :	10,5	°C		
18	5.5, A.1.1 a) to x)	Design ambient temperature (if more than 40 °C or 104 °F) :	not more than 40°C	°C	Offshore (Netherlands)	
19	4.2 a) to e), 4.2 f, A.1.1 a) to x)	Relative humidity at maximum operating temperature (if more than 90 %) :	95	%		
20	4.2 f	Climatic conditions (K) for liquid immersed transformer :	4K26			
21	4.2 f	Special climatic conditions (Z) for liquid immersed transformer :	4Z1,4Z5,4Z14, 4Z15, 4Z17, 4Z10			
22	4.2 f	Biological conditions (B) for liquid immersed transformer :	4B2			
23	4.2 f	Chemically active substances (C) for liquid immersed transformer :	4CX			
24	4.2 f	Mechanically active substances (S) for liquid immersed transformer :	4S11			
25	4.2 f	Mechanical conditions (M) for liquid immersed transformer :	4M11			
26	9.6.18.1, 9.6.18.3	Corrosion class :	CX			
27	A.1.1 a) to x)	Seismic zone as per IEC 60721-2-6, figure 5 :	zone 2			
28	4.2 f , 4.2 i, 5.7.4.2, A.1.1 a) to x)	Location :	offshore fixed			
29	A.1.1 a) to x)	Unusual service conditions :	No			
30	5.7.3, 5.7.3	Sound power level :	68	dB(A)		01
31		**3. Hazardous area classification**				
32	4.2 g, A.1.1 a) to x)	Hazardous area classification zone :	non hazardous			
33	4.2 g, A.1.1 a) to x)	Hazardous area classification gas group :	N/A			
34	4.2 g, A.1.1 a) to x)	Hazardous area classification temperature class :	N/A			
35		**4. Technical data**				
36		**4.1 Electrical system data**				
37	5.4.1, A.1.1 a) to x)	Rated voltage (HV) :	66	kV		
38	5.4.1	Rated voltage (HV) :	6,9	kV		
39	5.4.1	Rated voltage (tertiary) :	N/A	kV		
40	5.4.2, A.1.1 a) to x)	Rated frequency :	50	Hz		
41	A.1.1 a) to x), A.1.2 a) to t)	System short circuit apparent power :	87,5	MVA		
42	6.4.3.e	Minimum full load power factor :	0,8			
43	A.1.1 a) to x), A.1.2 a) to t)	Supply voltage harmonic content :	5	%		
44		**4.2 Transformer/reactor data**				
45		**4.2.1 General**				
46		**Power frequency withstand voltage**				
47	A.1.1 a) to x)	Power frequency withstand voltage - HV (66kV) winding :	140	kV		
48	A.1.1 a) to x)	Power frequency withstand voltage - HV (6.9kV) winding :	20	kV		
49	A.1.1 a) to x)	Power frequency withstand voltage - tertiary winding :	N/A	kV		
50	A.1.1 a) to x)	Power frequency withstand voltage - neutral terminal :	20	kV		01
51		**Lightning impulse withstand voltage**				
52	A.1.1 a) to x)	Lightning impulse withstand voltage - HV (66kV) winding :	325	kV		
53	A.1.1 a) to x)	Lightning impulse withstand voltage - HV (6.9kV) winding :	60	kV		
54	A.1.1 a) to x)	Lightning impulse withstand voltage - tertiary winding :	N/A	kV		
55	A.1.1 a) to x)	Lightning impulse withstand voltage - neutral terminal :	60	kV		01
56	5.7.2, 7.1.1 , A.1.1 a) to x)	Number of phases :	3			
57	6.4.3.a, A.1.1 a) to x)	Direction of power flow :	bi-directional			
58	7.1.5, 5.7.2, 7.1.1, A.1.1 a) to x)	Connection and phase displacement symbol (vector group) :	Dyn11			
59	A.1.1 a) to x), A.1.2 a) to t), B.4	Percentage impedance on air natural rating at principal tap :	8	%		
60	5.7.2	High limit for zero sequence impedance :	N/A	ohms/ph		01
61	5.7.2	Low limit for zero sequence impedance :	N/A	Ohms/ph		01
62	5.1.1, A.1.1 a) to x)	Rated power in air natural mode (HV - 66kV) :	7000	kVA		
63	5.1.1, A.1.1 a) to x)	Rated power in air natural mode (HV - 6.9kV) :	7000	kVA		
64	5.1.1, A.1.1 a) to x)	Rated power in air natural mode (tertiary) :	N/A	kVA		
65	5.1.1, 5.1.3, A.1.1 a) to x)	Rated power in forced cooling mode (HV - 66kV) :	N/A	kVA		
66	5.1.1, 5.1.3, A.1.1 a) to x)	Rated power in forced cooling mode (HV - 6.9kV) :	N/A	kVA		
67	5.1.1, 5.1.3, A.1.1 a) to x)	Rated power in forced cooling mode (tertiary) :	N/A	kVA		

Row						Issue
2	Tag No. :	*TR-100AD1*				01
3	Service :	*66/6.9 kV, 7MVA Power Transformer*				01
68	5.4.3	Variation in V/Hz ratio from no load to rated load when exceeding 105 % :	Not more than 105	%		
69	A.1.1 a) to x), A.1.2 a) to t), A.2 a) to f)	Parallel operation :	No			
70	5.1.1	Requirement of 1.8 times overloading for transformer feeding a group of motors :	No			
71	5.8, A.1.1 a) to x)	Insulating liquid :	synthetic organic liquid		MIDEL 7131	01
72	A.1.1 a) to x), A.1.2 a) to t), Table 1	Tolerance on total losses when not in accordance with IEC 60076-1 :	N/A	%		
73	6.5, A.1.1 a) to x), A.1.2 a) to t), Table 1	Tolerance on impedance value when not in accordance with IEC 60076-1 :	N/A	%		
74		**4.2.2 Neutral terminal**				
75	9,4	Level of DC current in neutral :	<5	%		
76	A.1.1 a) to x)	Transformer neutral earthing for HV (66kV) winding :	N/A			
77	A.1.1 a) to x)	Transformer neutral earthing for HV (6.9kV) winding :	resistance grounded			
78	A.1.1 a) to x)	Transformer neutral earthing for tertiary winding :	N/A			
79	9,2	Sizing of the low voltage neutral terminal :	N/A	%		
80		**4.2.3 Winding**				
81	A.1.1 a) to x)	Winding conductor material :	copper			
82	5.7.2	Requirement of delta connected stabilizing winding :	No			
83	5.7.2	Method of earthing of delta connected stabilizing winding :	N/A			
84	A.1.1 a) to x)	Winding class of insulation :	A			01
85	A.1.1 a) to x)	Non-uniform (graded) insulation :	No			01
86	A.1.1 a) to x)	High temperature insulation :	No			01
87	A.1.2 a) to t)	Thermally upgraded paper :	No			01
88		**4.2.4 Termination**				
89	A.1.1 a) to x), A.1.2 a) to t)	Main external termination details (HV - 66kV) :	plug-in connection			01
90	A.1.1 a) to x), A.1.2 a) to t)	Main external termination details (HV - 6.9kV) :	cable box			
91	A.1.1 a) to x), A.1.2 a) to t)	Main external termination details (tertiary) :	N/A			
92	A.1.1 a) to x), A.1.2 a) to t)	Main external termination details (neutral) :	N/A			
93	A.1.1 a) to x), A.1.2 a) to t)	Cable box type :	air insulated			
94	A.1.1 a) to x)	Main cable box design :	supplier standard			
95	A.1.1 a) to x)	Cable type :	insulated			
96	A.1.1 a) to x)	Number of cables (HV - 66kV) :	3			01
97	A.1.1 a) to x)	Number of cables (HV - 6.9kV) :	6			01
98	A.1.1 a) to x)	Number of cables (tertiary) :	N/A			
99	9.6.11.1.4, A.1.1 a) to x)	Cable conductor size (HV - 66kV) :	300	mm²		01
100	9.6.11.1.4	Cable conductor size (HV - 6.9kV) :	120	mm²		01
101	9.6.11.1.4	Cable conductor size (tertiary) :	N/A	Select		
102	9.6.11.1.4, A.1.1 a) to x)	Number of cores per cable (HV - 66kV) :	1			01
103	9.6.11.1.4	Number of cores per cable (HV - 6.9kV) :	1			01
104	9.6.11.1.4	Number of cores per cable (tertiary) :	N/A			
105	9.6.11.1.4, A.1.1 a) to x)	Number of cables per phase (HV - 66kV) :	1			01
106	9.6.11.1.4	Number of cables per phase (HV - 6.9kV) :	2			01
107	9.6.11.1.4	Number of cables per phase (tertiary) :	N/A			
108	5.6, A.1.1 a) to x)	Separate neutral terminal box :	No			
109	9.6.9.5, A.1.1 a) to x)	Canopy required for cable box :	No			
110	9.6.9.9.7	Breather with dessicant or drain for main cable boxes :	No			01
111	A.1.1 a) to x)	Busduct type :	N/A			
112	A.1.1(a to x)	**Bushings**				
113	A.1.1 a) to x)	Type of bushings (HV - 66kV) :	Epoxy resin			01
114	A.1.1 a) to x)	Type of bushings (HV - 6.9kV) :	Porcelain			01
115	A.1.1 a) to x)	Type of bushings (tertiary) :	N/A			
116	A.1.1 a) to x)	Type of bushings (neutral) :	Porcelain			01
117		**4.2.5 Tap changer**				
118	6.1, A.1.1 a) to x)	Tap changer required and type :	OLTC			
119	6.4.2.a, 6.4.3.c	Voltage variation required on: :	HV			
120	A.1.1 a) to x)	Type of de-energized tap changer (DETC) :	N/A			
121	9.6.17.2.2	Tap changer switching medium :	liquid			
122	6.2.a, 6.2.b, 6.2.c	Category of voltage variation :	CFVV			
123	6.4.1, 6.4.2.b, 6.4.3.b, 6.4.3.c, A.1.1 a) to x), B.4	Tapping range :	±8x1,25	%		01
124	6.4.1, 6.4.2.b, 6.4.3.b, 6.4.3.c, A.1.1 a) to x)	Number of tapping positions :	17 steps			01
125	6.4.3.b	Principal tapping position :	symmetrical			
126	6,3	Maximum current tapping position :	68	A		01
127	9.6.17.3.4	Remote tap-changer cabinet for OLTC :	Yes			
128		**4.2.6 Cooling**				
129	5.2, 5.1.3, A.1.1 a) to x)	Type of cooling :	KNAN			
130	5.1.3, 9.3, A.1.2 a) to t)	Temperature rise of insulating liquid when not in accordance with IEC 60076-2 :	N/A			
131	5.1.3, A.1.2 a) to t)	Temperature rise of winding when not in accordance with IEC 60076-2 or IEC 60076-11 :	N/A			
132	4.2 a) to e)	Cooling water inlet temperature when not in accordance with IEC 60076-2 and IEC 60076-11 :	N/A			
133	5,2	Provision for mounting of cooling fans :	N/A			

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2	Tag No. :	*TR-100AD1*				01
3	Service :	*66/6.9 kV, 7MVA Power Transformer*				01
134	A.1.1 a) to x)	AF fan motor cabinet :	N/A			
135		**4.2.7 Miscellaneous requirements**				
136		**a. Construction**				
137	A.1.1 a) to x)	Type of cover for liquid immersed transformer and reactor :	bolted			
138	A.1.1 a) to x)	Surface finish of tank and radiators :	zinc coated			01
139	9.6.18.1	Painting class required :	VH			
140	A.1.1 a) to x)	Paint shade :	Suplier Standard			
141		**b. Interface**				
142	A.1.1 a) to x)	Auxiliary supply voltage details for cooling fans :	N/A	V		
143	A.1.1 a) to x)	Auxiliary supply voltage details for RTCC :	400	V		
144	8.3 d) to k)	Requirement of current transformer in neutral terminal box :	Yes			
145	A.1.1 a) to x)	Current transformer ratio :	250/1	A		01
146	A.1.1 a) to x)	Current transformer accuracy class :	5P20			01
147	A.1.1 a) to x)	Current transformer burden :	5	VA		01
148		**c. Transport**				
149	5.7.4.1, A.1.2 a) to t)	Limiting transportation dimensions (height) :	5075 ±20	mm		01
150	5.7.4.1, A.1.2 a) to t)	Limiting transportation dimensions (width) :	3000 ±20	mm		01
151	5.7.4.1, A.1.2 a) to t)	Limiting transportation dimensions (depth) :	3490 ±20	mm		01
152	5.7.4.1, A.1.2 a) to t)	Limiting transportation weight :	22750	kg		01
153	A.1.1(a to x)	Impact recorder requirement during transportation :	Yes			
154	5.7.4.2	Acceleration in excess of 1 g during transportation :	Yes			
155		**4.3 Reactor specific requirements**				
156	A.1.1 a) to x)	Application :	N/A			
157	A.1.1 a) to x)	Rated current :	N/A	A		
158	A.1.1 a) to x)	Rated short circuit current :	N/A	A		
159	A.1.1 a) to x)	Time to withstand rated short circuit current :	N/A	s		
160	6.5, A.1.1 a) to x)	Impedance at rated voltage and current :	N/A	Ohms		
161		**5. Accessories**				
162	9.1.2, A.1.1 a) to x)	Lifting lugs :	Yes			
163	9.3, A.1.1 a) to x)	Silica gel breather for main tank :	Yes			
164	A.1.1 a) to x)	Type of silica gel breather :	self regenerating			
165	A.1.1 a) to x), Annex F, Table F.1	Liquid level indicator :	Yes			
166	A.1.1 a) to x), Annex F, Table F.1	Magnetic liquid level gauge with alarm and trip contacts :	Yes			
167	9.6.3.4, 9.6.3.5, A.1.1 a) to x), Annex F, Table F.1	Buchholz relay with alarm and trip contacts :	Yes			
168	9.6.1.1, A.1.1 a) to x), Annex F	Pressure Relief Device (PRD) for transformer/reactor tank :	No			01
169	9.6.1.1	Pressure relief device for OLTC :	No			01
170	9.6.10.3.2	Pressure relief device for liquid filled cable box :	N/A			
171	9.6.1.3	Facility for directing emissions of liquid from the relief device in the direction specified :	No			01
172	A.1.1 a) to x)	Sudden pressure relay :	Yes			
173	A.1.1 a) to x), Annex F, Table F.1	Liquid temperature Indicator with alarm and trip contacts :	Yes			
174	A.1.1 a) to x), Annex F, Table F.2	Winding temperature indicator with alarm and trip contacts :	Yes			
175	A.1.1 a) to x), Annex F, Table F.3	Winding temperature measurement type :	Thermal Image			01
176	A.1.1 a) to x)	Cooling fans :	N/A			
177	A.1.1 a) to x)	Redundancy of cooling fans :	N/A			
178	A.1.1 a) to x), Annex F, Table F.1	Control panel for fan starters (for AF type transformer) :	N/A			
179	A.1.1 a) to x), Annex F, Table F.2	Marshalling box :	Yes			
180	A.1.1 a) to x)	HV (66kV) cable box :	Yes			
181	A.1.1 a) to x)	HV (6.9kV) cable box :	Yes			
182	A.1.1 a) to x)	Tertiary cable box :	N/A			
184	9.6.13, A.1.1 a) to x)	Surge arrester requirement :	No			01
185	9.6.13	Surge arrester class :	Select		No surge arrester	01
186	Annex F	Requirement of online dissolved gas analysis (DGA) :	No			
187	Annex F	Requirement of fiber optic temperature sensing :	No			
188	Annex F	Number of channels of fiber optic temperature sensor :	No			
189	9.6.6.2	Core earthing terminals at accessible location. :	Yes			
190	9.6.6.3, A.1.1 a) to x)	Earthing cable lug size :	Suitable for 35mm² earthing cable	mm		01
193	9,3	Alarm contact for diaphragm failure for transformer with diaphragm in conservator :	Yes			
194	A.1.1 a) to x)	Bi-directional rollers :	Yes			
195	4.2 f	Anti-condensation heater for cable box :	Yes			
196	9.6.17.3.5	Anti-condensation heater for remote tap-changer cabinet :	Yes			
197	9.1.2. Note	Requirement of ladder :	Yes			
198		**6. Design data from vendor**				
199		**6.1 Electrical parameters**				
200	A.1.1 a) to x), A.1.2 a) to t)	No-load loss at rated voltage and principal tap :	6,2	kW		01
201	A.1.1 a) to x), A.1.2 a) to t)	Load loss at rated voltage and principal tap :	34,8	kW		01

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2	Tag No. :	*TR-100AD1*				01
3	Service :	*66/6.9 kV, 7MVA Power Transformer*				01
202	A.1.1 a) to x)	Percentage regulation at unity power factor :	0,82	%		01
203	A.1.1 a) to x)	Percentage regulation at 0.8 lagging power factor :	5,374	%		01
204	5.1.1, A.1.1 a) to x)	Efficiency at unity power factor, 50 % load :	99,58	%		01
205	5.1.1, A.1.1 a) to x)	Efficiency at unity power factor, 100 % load :	99,42	%		01
206	5.1.1, 6.4.3.e, A.1.1 a) to x)	Efficiency at 0.8 lagging power factor, 50 % load :	99,47	%		01
207	5.1.1, 6.4.3.e, A.1.1 a) to x)	Efficiency at 0.8 lagging power factor, 100 % load :	99,27	%		01
208	6.5, 6.5, 6.5 , A.1.1 a) to x), B.4	Percentage impedance on AN rating at principal tap :	8	%		01
209	5.7.2 , A.1.1 a) to x)	Zero sequence impedance :	0,53	Ohms/ph		01
210		**6.2 Construction**				
211	A.1.1 a) to x)	Winding conductor material :	copper			01
212		**Winding type**				
213	A.1.1 a) to x)	HV (66kV) :	Non-foil			01
214	A.1.1 a) to x)	HV (6.9kV) :	Non-foil			01
215	A.1.1 a) to x)	Tertiary :	Select			
216	A.1.1 a) to x)	Weight of core and windings :	9300	kg		01
217	A.1.1 a) to x), A.1.2 a) to t)	Total weight with insulating liquid :	22750	kg		01
218	A.1.1 a) to x)	Weight of insulating liquid :	7000	kg		01
219	5.8, A.1.1 a) to x)	Insulating liquid :	synthetic organic liquid			01
220	A.1.1 a) to x)	On-load tap changer make :	MR			01
221	A.1.1 a) to x)	On-load tap changer power required :	1	kW		01
222	A.1.1 a) to x), A.1.2 a) to t)	Transformer overall assembled length :	5075 ±20	mm		01
223	A.1.1 a) to x), A.1.2 a) to t)	Transformer overall assembled width :	3000 ±20	mm		01
224	A.1.1 a) to x), A.1.2 a) to t)	Transformer overall assembled height :	3490 ±20	mm		01
225	A.1.1 a) to x)	Dimension details for remote tap changer cabinet length :	N/A	mm		01
226	A.1.1 a) to x)	Dimension details for remote tap changer cabinet width :	N/A	mm		01
227	A.1.1 a) to x)	Dimension details for remote tap changer cabinet height :	N/A	mm		01
228	A.1.1 a) to x), A.1.2 a) to t)	Transportation weight :	22750	kg		01
229	5.7.3, A.1.1 a) to x), A.1.2 a) to t)	Sound power level :	68	dB(A)		01
230	5.8, A.1.1 a) to x), A.1.2 a) to t)	Use of environmentally harmful materials :	No			01
231	4.2.f	Seismic zone certification :	No			01
232		**7. Testing requirements**				
233	11.1.3.a	Temperature rise test :	Yes			
234	6.6.b	Temperature rise test at tapping other than the maximum current tapping :	No			
235	11.1.3.d	Power consumption of fans and liquid pump motors :	N/A			
236	11.1.3.b, A.1.2 a) to t)	Dielectric type tests :	Yes			
237	11.1.3.c	Sound level test :	Yes			
238	11.1.3.e	Measurement of no-load loss and current at 90 % and 110 % of rated voltage :	Yes			
239	11.1.4.a, A.1.2 a) to t)	Dielectric special tests :	No			
240	11.1.4.b, A.1.2 a) to t)	Winding hot-spot temperature-rise measurements :	No			
241	11.1.4.c, A.1.2 a) to t)	Determination of capacitances windings-to-earth and between windings :	Yes			
242	11.1.4.e, A.1.2 a) to t)	Determination of transient voltage transfer characteristics :	Yes			
243	11.1.4.f, A.1.2 a) to t)	Measurement of zero-sequence impedance :	Yes			
244	11.1.4.g, A.1.2 a) to t)	Short-circuit withstand test :	Yes			
245	11.1.4.i, A.1.2 a) to t)	Vacuum deflection test :	No			
246	11.1.4.j, A.1.2 a) to t)	Pressure deflection test :	No			
247	11.1.4	Pressure deflection test for OLTC tank :	No			
248	11.1.4.k, A.1.2 a) to t)	Vacuum tightness test :	No			
249	11.1.4	Vacuum tightness test for OLTC tank :	No			
250	11.1.4.l, A.1.2 a) to t)	Measurement of frequency response :	No			
251	11.1.4.m, A.1.2 a) to t)	Check of external coating :	Yes			
252	A.1.2 a) to t)	Measurement of dissolved gasses before and after dielectric tests :	Yes			
253	11.1.4.o, A.1.2 a) to t)	Mechanical test :	Yes			
254	11.1.4	Simulated transformer/motor on load start test for unit transformer :	N/A			
255	11.1.4	Routine test for Ex 'P' type transformer in accordance with IEC 60079-13 :	N/A			
256	11.1.4	Routine tests for Ex 'O' type transformer in accordance with IEC 60079-6 :	N/A			

Row	S-720D Data Sheet for Transformers	Issue
2	Tag No. : *TR-100AD1*	01
3	Service : *66/6.9 kV, 7MVA Power Transformer*	01
4	**PURCHASE ORDER SPECIFIC REQUIREMENTS**	
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Data Sheet for Transformers

Guidance on the use of this data sheet

To be used in conjunction with :
IOGP S-720 Supplementary Specification to IEC 60076-1 Transformers.

This data sheet is set-up to be used in electronic format by both the purchaser/user and the supplier/manufacturer.

This data sheet provides reference back to the parent standard or the supplementary specification where relevant.

Default values (if applicable) have been set according to essential minimum requirements as an integral part of this specification and should only be changed where specific justification can be provided.

The Supplement sheet is provided in an open format sheet for application of specific items not covered in the main part of the data sheet. This sheet is not intended to modify requirements defined in the supplementary requirements specification.

The data sheet includes a revision (issue) column on the right hand side for use by the purchaser/user. After the first issue, for each subsequent revision of the data sheet that is issued to suppliers for enquiry or purchase, the purchaser/user should use the issue column to denote that the data on a specific row has been updated since the previous revision. This will enable the supplier to easily identify where changes have been made.

Legend		
	Select	Supplier/manufacturer completed, pick list of pre-defined values (may be pre-populated with a default value).
	Input data	Supplier/manufacturer completed data entry.
	Select	Purchaser/user completed, pick list of pre-defined values (may be pre-populated with a default value).
	Input data	Purchaser/user completed data entry.
	Select	Either supplier/manufacturer or purchaser/user completed, pick list of pre-defined values (may be pre-populated with a default value).
	Input Data	Either supplier/manufacturer or purchaser/user completed data entry.
	Select	Selection of units from a pre-defined pick list.

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