

INNIO Jenbacher
QSEDOK1 TEST CERTIFICATE

QSEDOK1

Rev: 3.0

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#.#	Section Modified and Revision Description	Date	Author
1.0	Document creation	-	Praxmarer P.
2.0	Integration in QMS-template	04.11.2014	Praxmarer P.
3.0	Change to INNIO	28.11.2018	Lengauer CH.

ENGINE TEST CERTIFICATE ACCORDING TO	ISO 3046	GENSET TEST CERTIFICATE ACCORDING TO	ISO 8528
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PASSWORD: LONGCOAL HEGANG LCMM_2
Order-No.: **Customer:**
Design-No.:

GENERATOR SET
 Manufacturer: INNIO Jenbacher Type: JGS 420 GS-S.L Number: 1675575

ENGINE
 Manufacturer: INNIO Jenbacher Type: J 420 GS-D175 Number: 1675566
 Coolant: 40% Glycol - Water Starter: E-Starter Oil: Jenbacher N Oil 40

ALTERNATOR
 Manufacturer: LEROY SOMER Type: LSA 53.2 XL7 Number: 614210/1
 Style: IM 1001 Safety Class IP23 Isolation class: H
 Nominal Power: (T.F) 2100 kVA cosφ 0,8 Nominal Voltage: 6300 V
 Nominal Current: 192 A Nominal Frequency: 50 Hz

SWITCHGEAR

Type:	Number:	Manufacturer:	Type:	Number:	Manufacturer:
Module Control	1675564	INNIO Jenbacher			
Interface	1675562	INNIO Jenbacher			

NOMINAL VALUES OF GEN-SET

ELECTRIC POWER	1425	kW
ENGINE OUTPUT	1466	kW
NOMINAL VOLTAGE	6300	V
NOMINAL CURRENT	131	A
NOMINAL POWER FACTOR	1,00	cosφ
SPEC. HEAT CONSUMPTION	(+/- 5%) 2,32	kWh kWh
ELECTRICAL EFFICIENCY	(+/- 5%) 41,9	%
HIGH TEMP. CIRCUIT THERMAL OUTPUT	(+12 - 8%) -	kW 2)
LOW TEMP. CIRCUIT THERMAL OUTPUT	(+12 - 8%) -	kW 2)
MIXTURE TEMPERATURE	60	°C
ENGINE COOLANT DISCHARGE TEMP.	90	°C
SPEED	1500	U min
NOx	500	mg nm ³
CO	-	mg nm ³
-	-	

test run,date 15.06.2023	tested by Strasser Lukas
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released Assembly Quality

 Hupfauf Martin

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PASSWORD: LONGCOAL HEGANG LCMM_2
ENGINE-TYPE: J 420 GS-D175
ENGINE-NR.: 1675566

MEASURING-NO.		1	2	3	4	5	6	7	8	
ENGINE LOAD	[%]	100	100	50	50	75	75			
TIME	[hh:mm]	09:58	10:01	09:07	09:10	09:31	09:34			
TEST RUN CONDITIONS 1)										
1	BAROMETRIC PRESSURE	mbar	954,7	954,7	955,3	955,3	955,1	955		
2	INTAKE AIR TEMPERATURE	°C	34	34	30	31	31	31		
3	RELATIV AIR HUMIDITY	%	24,4	24,1	28,2	27,8	25,8	25,8		
CAPACITY										
4	ENGINE SPEED	min ⁻¹ RPM	1500	1499	1499	1500	1499	1500		
5	FREQUENCY	Hz	50	50	50	50	50	50		
6	VOLTAGE	V	6376	6386	6347	6347	6345	6393		
7	CURRENT	A	129	129	65	65	97	97		
8	POWER FACTOR	cosφ	1,00	1,00	1,00	1,00	1,00	1,00		
9	ELECTRICAL OUTPUT	kW	1429	1429	713	713	1071	1070		
10	GENERATOR EFFICIENCY	%	97,2	97,2	96,4	96,4	97,0	97,0		
11	ENGINE OUTPUT	kW	1470	1470	739	739	1104	1103		
12	Reserve		#	#	#	#	#	#		
13	Reserve		#	#	#	#	#	#		
FUEL CONSUMPTION at cos φ = 1,0										
14	GASFLOW RATE	m³/h	321,62	321,36	170,94	171,03	246,89	246,92		
15	GAS PRESSURE	mbar	203,48	203,44	219,59	219,44	209,5	209,32		
16	GAS TEMPERATURE	°C	24,7	24,5	25,5	25,5	25,5	25,5		
17	NORMAL GASFLOW RATE (0°C, 1013,25 mbar)	nm³/h	337,09	336,98	181,23	181,31	259,48	259,44		
18	FUEL CALORIFIC INPUT	kW	3512	3511	1888	1889	2704	2703		
19	SPECIFIC HEAT CONSUMPTION	kWh kWh	2,389	2,388	2,554	2,555	2,449	2,45		
20	ELECTRICAL EFFICIENCY	%	40,7	40,7	37,7	37,7	39,6	39,6		

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ENGINE LOAD	[%]	100	100	50	50	75	75		
TIME	[hh:mm]	09:58	10:01	09:07	09:10	09:31	09:34		
CALCULATION at $\cos\phi = 1$									
21	GENERATOR EFFICIENCY	%	97,2	97,2	96,4	96,4	97,0	97,0	
22	ELECTRICAL OUTPUT	kW	1429	1429	713	713	1071	1070	
23	ELECTRICAL EFFICIENCY	%	40,7	40,7	37,7	37,7	39,6	39,6	
HIGH TEMPERATURE COOLING CIRCUIT 2)									
24	HIGH TEMP. CIRCUIT WATER TEMPERATURE INLET	°C	69,7	69,7	69,9	69,8	69,9	69,9	
25	HIGH TEMP. CIRCUIT WATER TEMPERATURE OUTLET	°C	89,5	89,4	84,5	84,5	85,4	85,4	
26	HIGH TEMP. CIRCUIT WATER FLOW RATE	m³/h	39,6	39,7	25,6	25,7	36,5	36,5	
27	HIGH TEMP. CIRCUIT THERMAL OUTPUT	kW	878	877	420	424	633	634	
LOW TEMPERATURE COOLING CIRCUIT									
28	LOW TEMPERATURE COOLANT TEMP. INLET	°C	49,9	50,0	49,7	50,0	49,9	49,9	
29	LOW TEMPERATURE COOLANT TEMP. OUTLET	°C	53,2	53,3	51,5	51,7	52,4	52,4	
30	LOW TEMP. CIRCUIT FLOW RATE	m³/h	20,0	20,0	20,6	20,7	20,0	20,0	
31	LOW TEMP. CIRCUIT THERMAL OUTPUT	kW	72	71	39	40	53	53	
ENGINE COOLANT									
32	COOLINGWATER TEMP. INLET	°C	84,7	84,7	81,4	81,4	81,4	81,4	
33	COOLINGWATER TEMP. OUTLET	°C	88,8	88,8	83,9	83,9	84,8	84,8	
34	RESERVE	#	#	#	#	#	#	#	
ENGINE OIL									
35	OILTEMP. BEFORE COOLER	°C	#	#	#	#	#	#	
36	OILTEMP. AFTER COOLER	°C	74,6	74,6	73,8	73,8	74,1	74,1	
37	OILPRESSURE BEFORE FILTER	Bar	4,65	4,65	4,85	4,85	4,75	4,75	
38	OILPRESSURE AFTER FILTER	Bar	4,44	4,44	4,65	4,65	4,55	4,55	

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ENGINE LOAD	[%]	100	100	50	50	75	75			
TIME	[hh:mm]	09:58	10:01	09:07	09:10	09:31	09:34			
AIR-MIXTURE										
39	MIXTURE TEMP. AFTER INTERCOOLER	°C	56	56	50	51	54	54		
40	PRECHAMBER GAS PRESSURE	mbar	#	#	#	#	#	#		
41	BOOST PRESSURE BEFORE THROTTLE-FLAP	mbar	2272	2272	871	869	1478	1478		
42	BOOST PRESSURE AFTER THROTTLE-FLAP	mbar	2255	2255	717	717	1464	1464		
43	PRESSURE DROP INTERCOOLER	mbar	61	61	38	38	55	55		
POWER RESERVE										
44	TURBOBYPASS POSITION	%	46	45	44	44	75	76		
45	TECJET POSITION		1,779	1,779	1,736	1,736	1,743	1,743		
46	THROTTLE VALVE POSITION	%	80	80	35	35	80	80		
47	IGNITION TIMING	°cs. b. TDC	24	24	24	24	24	24		
EXHAUST GAS										
48	EXHAUSTGAS TEMP. AFTER ENGINE	°C	418	418	473	473	445	445		
49	RESERVE		#	#	#	#	#	#		
50	RESERVE		#	#	#	#	#	#		
51	O2-CONTENT EXHAUST GAS	%	10,23	10,24	9,89	9,90	10,13	10,14		
52	CO-CONTENT EXHAUST GAS (without OXI-Cat)	mg nm³	812	811	800	799	806	806		
53	NOx-CONTENT EXHAUST GAS (without SCR-Cat)	mg nm³	478	477	477	479	430	426		

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ENGINE LOAD	[%]	100	100	50	50	75	75			
TIME	[hh:mm]	09:58	10:01	09:07	09:10	09:31	09:34			
Cylinder temperatures										
53	Cylinder temperature	1 °C	519	519	497	497	509	509		
55	Cylinder temperature	2 °C	524	524	501	501	513	513		
56	Cylinder temperature	3 °C	521	522	498	498	510	510		
57	Cylinder temperature	4 °C	522	521	496	497	510	510		
58	Cylinder temperature	5 °C	523	523	498	499	510	510		
59	Cylinder temperature	6 °C	524	524	500	500	512	513		
60	Cylinder temperature	7 °C	523	523	496	497	509	509		
61	Cylinder temperature	8 °C	523	523	496	496	509	509		
62	Cylinder temperature	9 °C	523	523	496	496	510	510		
63	Cylinder temperature	10 °C	522	522	495	495	509	509		
64	Cylinder temperature	11 °C	518	518	493	493	506	506		
65	Cylinder temperature	12 °C	520	519	496	496	508	508		
66	Cylinder temperature	13 °C	519	520	494	494	507	506		
67	Cylinder temperature	14 °C	523	523	497	497	511	511		
68	Cylinder temperature	15 °C	523	523	497	497	509	510		
69	Cylinder temperature	16 °C	521	521	493	493	507	507		
70	Cylinder temperature	17 °C	523	523	497	497	510	510		
71	Cylinder temperature	18 °C	519	519	493	493	506	506		
72	Cylinder temperature	19 °C	522	522	496	496	509	509		
73	Cylinder temperature	20 °C	521	521	494	494	507	507		
74	Cylinder temperature	21 °C	#	#	#	#	#	#		
75	Cylinder temperature	22 °C	#	#	#	#	#	#		
76	Cylinder temperature	23 °C	#	#	#	#	#	#		
77	Cylinder temperature	24 °C	#	#	#	#	#	#		

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REMARKS

Location: 2

... in the field of measured quantity ... not available or not measured

Exhaustgas emissions with reference to 5 % O2 in dry exhaust gas

- 1) Further test run conditions: Sea level: 520m; Ambient temperature = air intake temperature
- 2) Thermal Output measured with: 40% Glycol - Water

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Process - Gaschromatograph ABB NGC8206

Natural Gas Analysis Report

Sample Name: NATURAL GAS
Injection Date: 15.06.2023 11:00:20
Operator: TTSE

Component	Vol %
Oxygene (O ₂)	0,0000
Nitrogene (N ₂)	0,7773%
Methane (CH ₄)	91,9288%
n-Hexane (C ₆ H ₁₄)	0,0332%
Carbon Dioxide (CO ₂)	1,0967%
Ethane (C ₂ H ₆)	5,0106%
Propane (C ₃ H ₈)	0,8527%
i-Butane (i-C ₄ H ₁₀)	0,1170%
n-Butane (n-C ₄ H ₁₀)	0,1319%
i-Pentane (i-C ₅ H ₁₂)	0,0283%
n-Pentane (n-C ₅ H ₁₂)	0,0235%
neo-Pentane (neo-C ₅ H ₁₂)	0,0000%
total:	100,00%

LOWER CALORIC VALUE **10,420** kWh/nm³
METHANE NUMBER **82,18**
DENSITY **0,785** kg/nm³

FUEL GAS (at test bench) NATURAL GAS

Reference: ISO 6976: 1995(E)

END OF THE REPORT