

Technical data 50 Hz TCG 2016 V16 C, Bio gas, 500 NOx

Power : ISO standard power ICN
Speed : 1500 min⁻¹
Speed governor : TEM EVO

Fuel gas : Bio gas (65% CH₄ / 35% CO₂ or 60% CH₄ / 32% CO₂, rest N₂ or 50% CH₄ / 27% CO₂, rest N₂)

Emission NOx : 500 mg/m³n (tolerance - 8%)

Engine type		TCG 2016 V16 C dry exhaust manifold								
Number of cylinder / configuration		16 V								
Bore / stroke	mm	132,0 / 160,0								
Displacement	dm ³	35,0								
Compression ratio		15,0 : 1								
Mean piston speed	m/s	8,0								
Starter motor	kWel / V DC	9,0 / 24								
Lube oil content engine / base frame (optional)	dm ³	135 / 300								
typical mean lube oil consumption at full load	g/kWh	0,20								
Engine jacket water volume/ Kvs value	dm ³ / m ³ /h	56 / 42,6		- with glycol						
Engine jacket water temperature in / out max.	°C	84,0 / 92,0		(84,0 / 92,0)						
Engine jacket water flow rate min. / max.	m ³ /h	39 / 60								
Engine jacket water flow rate / pressure loss	m ³ /h / bar	45,5 / 1,14		(48,9 / 1,32)						
Intercooler coolant volume engine / Kvs value	dm ³ / m ³ /h	5,0 / 10,4								
Intercooler coolant temperature in / out	°C	50,0 / 55,0		(50,0 / 55,3)						
Intercooler coolant flow rate / pressure loss	m ³ /h / bar	10,0 / 0,92		(10,0 / 0,92)						
Generator		Marelli MJB 400 LC 4 or equal								
Generator brand / type		V / % / Hz	400 / +-5 / 50							
Voltage / voltage range / frequency		min ⁻¹	1500							
Speed		%	96,80	96,80	96,20					
Generator efficiency (with power factor = 1,00)		%	100	75	50					
Load		kW	826	620	416					
Engine power according ISO 3046/1		bar	18,9	14,2	9,5					
Mean effective pressure		approx. °C	449	473	492					
Exhaust temperature		approx. kg/h	4290	3252	2243					
Exhaust mass flow wet		approx. kg/h	3954	2993	2060					
Combustion air mass flow - ISO 3046/1		Energy balance (tolerance for heat rejection ± 8%)								
Electrical power (with power factor = 1,00)	kWel	800	600	400						
Jacket water heat	kW	411	325	251						
Intercooler LT heat with coolant temperature 50 °C	kW	56	35	18						
Exhaust heat cooled to 150 °C	kW	398	327	240						
Engine radiation heat	kW	31	23	16						
Generator radiation heat	kW	26	20	16						
Fuel consumption (tolerance + 5%)	kW	1880	1450	1024						
Specific fuel consumption	kWh / kWh	2,28	2,34	2,46						
Mechanical efficiency	%	43,9	42,8	40,6						
Electrical efficiency	%	42,6	41,4	39,1						
Thermal efficiency (exhaust cooled to 150 °C)	%	43,0	45,0	47,9						
Total efficiency	%	85,6	86,4	87,0						
System parameters										
see also MWM " Layout of Power Plants "										
Ventilation air flow for	ΔT =	15 K	approx. kg/h	21204 (including combustion air)						
Combustion air temperature minimum / design	Altitude	°C	20 / 25	100 m						
Exhaust backpressure minimum / maximum		mbar	30 / 50							
Maximum pressure loss in front of air cleaner		mbar	5,0							
Zero-pressure gas control unit: gas flow pressure, fixed between		mbar	20 / 200	(see also TR 0199-99-3017)						
Pre-pressure gas control unit: gas flow pressure, fixed between		bar	0,5 / 10	(see also TR 0199-99-3017)						
Starter battery 24V, capacity required		Ah	286							
Dry weight engine		kg	2880							
Dry weight genset		kg	6570							
Noise emissions (at 1m)										
TCG 2016 V16 C	Frequency band	Hz	63	125	250	500	1000	2000	4000	8000
Exhaust noise	122 dB(A) ± 2,5	dB(lin)	107	117	123	118	116	117	111	104
Air-borne noise	101 dB(A) ± 1,0	dB(lin)	91	100	97	98	97	95	91	88

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