

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

Power : ISO standard power ICN		Fuel gas : Bio gas (65% CH4 / 35% CO2 or 60% CH4 / 32% CO2, rest N2 or 50% CH4 / 27% CO2, rest N2)							
Speed : 1500 min ⁻¹									
Speed governor : TEM EVO		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		dm³ 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)		dm³ 135 / 300							
typical mean lube oil consumption at full load		g/kWh 0,20							
Engine jacket water volume/ Kvs value		dm³ / m³/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.		m³/h		39 / 60					
Engine jacket water flow rate / pressure loss		m³/h / bar		45,5 / 1,14		(48,9 / 1,32)			
Intercooler coolant volume engine / Kvs value		dm³ / m³/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		m³/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		%							
Generator efficiency (with power factor = 1,00)		%		96,80		96,80		96,20	
Load		%		100		75		50	
Engine power according ISO 3046/1		kW		826		620		416	
Mean effective pressure		bar		18,9		14,2		9,5	
Exhaust temperature		approx. °C		449		473		492	
Exhaust mass flow wet		approx. kg/h		4290		3252		2243	
Combustion air mass flow - ISO 3046/1		approx. kg/h		3954		2993		2060	
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			

Technical changes reserved © 08 - 2009