

## Technical data 50 Hz TCG 2020 V20, Natural gas, 500 NOx

Power : ISO standard power ICN		Fuel gas : Natural gas	
Speed : 1500 min <sup>-1</sup>		Methane number MN : 80	
Speed governor : TEM EVO		Emission NOx : 500 mg/m <sup>3</sup> n (tolerance - 8%)	
<b>Engine type</b>		<b>TCG 2020 V20 dry exhaust manifold</b>	
Number of cylinder / configuration		20 V	
Bore / stroke	mm	170,0 / 195,0	
Displacement	dm <sup>3</sup>	88,5	
Compression ratio		13,5 : 1	
Mean piston speed	m/s	9,8	
Starter motor	kWel / V DC	15,0 / 24	
Lube oil content engine / base frame (optional)	dm <sup>3</sup>	300 / 725	
typical mean lube oil consumption at full load	g/kWh	0,20	
Engine jacket water volume/ Kvs value	dm <sup>3</sup> / m <sup>3</sup> /h	210 / 66,0	- with glycol
Engine jacket water temperature in / out max.	°C	80,0 / 93,0	(80,0 / 93,0)
Engine jacket water flow rate min. / max.	m <sup>3</sup> /h	60 / 85	
Engine jacket water flow rate / pressure loss	m <sup>3</sup> /h / bar	66,6 / 1,02	(71,6 / 1,18)
Intercooler coolant volume engine / Kvs value	dm <sup>3</sup> / m <sup>3</sup> /h	52,0 / 72,0	
Intercooler coolant temperature in / out	°C	38,0 / 41,8	(38,0 / 42,1)
Intercooler coolant flow rate / pressure loss	m <sup>3</sup> /h / bar	40,0 / 0,31	(40,0 / 0,31)
<b>Generator</b>		Marelli MJB 560 LA 4 or equal	
Generator brand / type		V / % / Hz	400 / +5 / 50
Voltage / voltage range / frequency		min <sup>-1</sup>	1500
Speed		%	97,30
Generator efficiency (with power factor = 1,00)			97,20
			96,60
<b>Load</b>		%	<b>100</b>
Engine power according ISO 3046/1	kW	2055	1543
Mean effective pressure	bar	18,6	13,9
Exhaust temperature	approx. °C	424	435
Exhaust mass flow wet	approx. kg/h	10741	8185
Combustion air mass flow - ISO 3046/1	approx. kg/h	10402	7923
<b>Energy balance</b>		(tolerance for heat rejection ± 8%)	
Electrical power (with power factor = 1,00)	kWel	<b>2000</b>	<b>1500</b>
Jacket water heat	kW	978	781
Intercooler LT heat with coolant temperature 38 °C	kW	172	123
Exhaust heat cooled to 120 °C	kW	1005	795
Engine radiation heat	kW	70	67
Generator radiation heat	kW	55	43
Fuel consumption (tolerance + 5%)	kW	4581	3538
Specific fuel consumption	kWh / kWh	2,23	2,29
Mechanical efficiency	%	44,9	43,6
Electrical efficiency	%	43,7	42,4
Thermal efficiency (exhaust cooled to 120 °C)	%	43,3	44,5
Total efficiency	%	87,0	86,9
<b>System parameters</b>			
see also MWM " Layout of Power Plants "			
Ventilation air flow for	ΔT = 15 K	approx. kg/h	49028 (including combustion air)
Combustion air temperature minimum / design	Altitude	°C	20 / 25
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	430
Dry weight engine		kg	7800
Dry weight genset		kg	18200
<b>Noise emissions (at 1m)</b>			
TCG 2020 V20	Frequency band	Hz	63 125 250 500 1000 2000 4000 8000
Exhaust noise	123 dB(A) ± 2,5	dB(lin)	129 138 120 110 104 98 100 94
Air-borne noise	112 dB(A) ± 1,0	dB(lin)	95 109 104 104 104 102 106 107

Technical changes reserved © 02 - 2010