

## Technical data 50 Hz TCG 2032 V16, Natural gas, 500 NOx

Power : ISO standard power ICN		Fuel gas : Natural gas	
Speed : 1000 min <sup>-1</sup>		Methane number MN :	70
Speed governor : TEM EVO		Emission NOx :	500 mg/m <sup>3</sup> n (tolerance - 8%)
<b>Engine type</b>		<b>TCG 2032 V16 dry exhaust manifold</b>	
Number of cylinder / configuration		16 V	
Bore / stroke	mm	260,0 / 320,0	
Displacement	dm <sup>3</sup>	271,8	
Compression ratio		12,0 : 1	
Mean piston speed	m/s	10,7	
Starter motor	Air dm <sup>3</sup> /s / bar	800,0 / 16	
Lube oil content	dm <sup>3</sup>	2200	
typical mean lube oil consumption at full load	g/kWh	0,30	
Lube oil flow rate	m <sup>3</sup> /h	125	
Lube oil temperature engine inlet	°C	80	
Engine jacket water volume/ Kvs value	dm <sup>3</sup> / m <sup>3</sup> /h	570 / 93,0	- with glycol
Engine jacket water temperature in / out max.	°C	78,0 / 90,0	( 78,0 / 90,0 )
Engine jacket water flow rate min. / max.	m <sup>3</sup> /h	105 / 130	
Engine jacket water flow rate / pressure loss	m <sup>3</sup> /h / bar	113,4 / 1,49	( 122,1 / 1,72 )
Intercooler coolant volume engine / Kvs value	dm <sup>3</sup> / m <sup>3</sup> /h	51,0 / 57,0	
Intercooler coolant temperature in / out	°C	40,0 / 44,4	( 40,0 / 44,8 )
Intercooler coolant flow rate / pressure loss	m <sup>3</sup> /h / bar	65,0 / 1,30	( 65,0 / 1,30 )
<b>Generator</b>		AvK DIG 156 m/6 or equal	
Generator brand / type	V / % / Hz	11000 / +-10 / 50	
Voltage / voltage range / frequency	min <sup>-1</sup>	1000	
Speed	%	97,95	97,72 96,83
Generator efficiency (with power factor = 1,00)			
<b>Load</b>		%	<b>100 75 50</b>
Engine power according ISO 3046/1	kW	4390	3300 2220
Mean effective pressure	bar	19,4	14,6 9,8
Exhaust temperature	approx. °C	436	470 496
Exhaust mass flow wet	approx. kg/h	22217	17026 11972
Combustion air mass flow - ISO 3046/1	approx. kg/h	21488	16461 11569
<b>Energy balance</b>		(tolerance for heat rejection ± 8%)	
Electrical power (with power factor = 1,00)	kWeI	<b>4300</b>	<b>3225 2150</b>
Jacket water heat	kW	1538	1086
Intercooler LT heat with coolant temperature 40 °C	kW	326	228 150
Exhaust heat cooled to 120 °C	kW	2240	1928 1483
Lube oil heat	kW	543	439 360
Engine radiation heat	kW	220	210 190
Generator radiation heat	kW	90	75 70
Fuel consumption (tolerance + 5%)	kW	9891	7661 5465
Specific fuel consumption	kWh / kWh	2,25	2,32 2,46
Mechanical efficiency	%	44,4	43,1 40,6
Electrical efficiency	%	43,5	42,1 39,3
Thermal efficiency (exhaust cooled to 120 °C)	%	43,7	45,1 47,8
Total efficiency	%	87,2	87,2 87,1
<b>System parameters</b>			
see also MWM " Layout of Power Plants "			
Ventilation air flow for	ΔT = 15 K	approx. kg/h	114305 (including combustion air)
Combustion air temperature for engine with air preheater			
minimum / design	Altitude	°C	10 / 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	50 / 300 (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)
Air bottle, volume / pressure		dm <sup>3</sup> / bar	2000 / 30
Dry weight engine		kg	22900
Dry weight genset		kg	49000
<b>Noise emissions (at 1m)</b>			
TCG 2032 V16	Frequency band	Hz	63 125 250 500 1000 2000 4000 8000
Exhaust noise	123 dB(A) ± 2,5	dB(lin)	131 124 122 121 117 115 113 109
Air-borne noise	109 dB(A) ± 1,0	dB(lin)	99 109 104 101 99 99 104 101

Technical changes reserved © 05 - 2009