

C87 TE1D

255 kW (1500 rpm) - 276 kW (1800 rpm)

Engine C87 TE1D

1/ GENERAL			1500 rpm	1800 rpm
Engine model	C87 TE1D			
Basic engine type	F2CE9685A*E001 - 504165736			
Number of cylinders	6			
Firing order (N° 1 nearest to fan)	1-4-2-6-3-5			
Cylinder arrangement	in line			
Valves per cylinder	4			
Cycle	diesel 4 stroke			
Injection system	direct common rail			
Electronic engine control unit	BOSCH EDC7 UC31			
Induction System	turbo aftercooler air/air			
Bore	mm	117		
Stroke	mm	135		
Total displacement	lit	8,7		
Mean piston speed	m/s	6,75	8,1	
Compression ratio	16,5 : 1			
Flywheel rotation	anti clockwise viewed on flywheel			
Housing flywheel	SAE 1			
Flywheel	14"			
Moment of inertia				
without flywheel	kgm ²	0,3		
flywheel only	kgm ²	1,94		
BMEP gross				
Prime Power	bar/kPa	17,6 (1765)	18,5 (1854)	
Stand-by Power	bar/kPa	24,2 (2420)	22,2 (2220)	
Dry weight (including cooling package)	kg	~ 1050		
Energy to coolant	kcal/kWh	327	309	
Energy to charge cooler	kcal/kWh	225	215	
Energy to radiation	kcal/kWh	68	118	
Dimensions L x W x H	mm	2042 x 1055 x 1394		

2/ PERFORMANCES			1500 rpm	1800 rpm
Continuous Power	(gross)	kWm	191,2	211
Prime Power	(gross)	kWm	239	263,6
Stand-By Power	(gross)	kWm	263	290
Fan consumption		kWm	6,8	10
Continuous Power	(net)	kWm	184,7	201
Prime Power	(net)	kWm	232,2	253,6
Stand-By Power	(net)	kWm	256,2	280
Performance condition				
temperature	°C	≤ 40		
altitude a.s.l	m	≤ 1000		
Derating				
temperature > T 40°C	%/5°C	3%		
altitude >1000 <3000 m	%/500m	3%		
altitude >3000 m	%/500m	6%		

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3/ COOLING SYSTEM			1500 rpm	1800 rpm
Type			liquid	
Recommended coolant			water + 50 % paraflu 11	
Coolant capacity				
engine only	liter		15	
radiator and hoses	liter		48	
Coolant pump flow	l/min		239,5	287,5
Pressure cap setting	kPa (bar)		70 (0,7)	
Shutdown switch setting	°C		103	
Maximum additional restriction	Pa		196	
Air To Boil	Prime Power	°C	55	52
Fan				
diameter	mm		700	
number of blades			8	
drive ratio			1,03 : 1	
speed	rpm		1545	1854
air flow	m ³ /s		5,14	6,5
power consumption	kWm		6,8	10

4/ LUBRICATION SYSTEM			1500 rpm	1800 rpm
Oil sump capacity				
max	liter		23	
min	liter		12,5	
Oil system capacity including filter	liter		28	
Oil pressure at rated speed	kPa		300-500	
Oil temperature				
normal	°C		0	
max	°C		120	
Engine angularity				
longitudinal	degrees		30°	
transverse	degrees		30°	
Servicing interval	hours		600	
Oil specification			ACEA E3/E5	
Oil consumption	%fuel		< 0,2	

5/ INTAKE SYSTEM			1500 rpm	1800 rpm
Air consumption at 100 % of load	m ³ /h (Kg/h)		1200 (1440)	1248 (1497)
Air intake restriction, clean filter	kPa (mbar)		2 (20)	
Air intake restriction, dirty filter	kPa (mbar)		5 (50)	
Air filter type			dry	

6/ EXHAUST SYSTEM			1500 rpm	1800 rpm
Gas flow at stand-by Power	kg/h		1495	1557
Max temperature at PRP (25°C)	°C		488	500
Max allowable back pressure	kPa (mbar)		5 (50)	
Energy to exhaust	kcal/kWh		650	668

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7/ FUEL SYSTEM			1500 rpm	1800 rpm
Fuel consumption at				
Stand-By	gr/kWh (l/h) [kg/h]		200,9 (64,5) [53,8]	205 (72,3) [60,7]
Full load	gr/kWh (l/h) [kg/h]		205,4 (58,5) [49,1]	204,5 (64,3) [54,7]
80%	gr/kWh (l/h) [kg/h]		209,3 (47,6) [40]	215 (54) [45,4]
50%	gr/kWh (l/h) [kg/h]		225 (35,4) [29,7]	225 (38,8) [32,6]
Fuel specifications			EN 590	
Feed pump max suction head		m	-	

8/ ELECTRIC SYSTEM			1500 rpm	1800 rpm
Voltage (negative to ground)		V	24	
Starter motor				
make		DENSO		
power		kW	4,5	
pull current		Amp	12	
hold current		Amp	12	
break away current +20°C		Amp	1020	
cranking current +20°C		Amp	0	
Number of teeth on starter motor			10	
Number of teeth on flywheel			149	
Starting batteries				
recommended capacity		Ah	2x	185
discharge current		Amp		1200
(EN 50342)				
Alternator				
voltage		V		28
charge		Amp		90

9/ COLD STARTING			1500 rpm	1800 rpm
Without air preheating		°C	-10	
With air preheating		°C	-25	

10/ EMISSION GASEOUS AND PARTICLES			1500 rpm	1800 rpm
No _x	Oxides of nitrogen	gr/kWh	5,54	-
HC	Hydrocarbons	gr/kWh	0,1	-
No _x +HC		gr/kWh	5,64	3,4
CO	Carbon monoxide	gr/kWh	0,2	0,6
PT	Particles	gr/kWh	0,058	0,13