

C87 TE1D

256 kW (1500 rpm) - 280 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)			~ 1050	
Energy to coolant			327	309
Energy to charge cooler			225	215
Energy to radiation			68	118
Dimensions L x W x H			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			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