UL LISTED FM APPROVED

A96 BODB4AF40E REV.3

LISTED SPRINKLER SOLUTIONS

B4AF40 OPERATION DATASHEET

ENGINE GENERAL DATA

THERMODYNAMIC CYCLE	DIESEL - 4 STROKE
ENGINE ARCHITECTURE	4 CYLINDERS, IN LINE
FIRING ORDER	1 - 3 - 4 - 2
AIR INTAKE	NA
COOLING	WATER
CHARGE AIR COOLING SYSTEM	N/A
COMPRESSION RATIO	17,5:1
INJECTION SYSTEM	MECHANICAL ROTARY PUMP
COMBUSTION	DIRECT INJECTION
ENGINE DISPLACEMENT	4.5 l
VALVES PER CYLINDER	2
INTAKE	1
EXHAUST	1
ROTATION (VIEWED FROM ENGINE FLYWHEEL)	CCW
ENGINE CRANKCASE VENTILATION SYSTEM	RECIRCULATED
ENGINE WEIGHT	570 kg

ENGINE PERFORMANCE

ENGINE SPEED [rpm]	NET POWER RATING [kW (cv) (1) (2)]	FUEL CONSUMPTION RATE [l/h]
1760 rpm	48 (65)	15
2100 rpm	55 (75)	21
2200 rpm	58 (79)	21
2350 rpm	61 (83)	22
2600 rpm	59 (80)	23
2800 rpm	58 (79)	24
2940 rpm	58 (79)	24

(1) Power at flywheel according to 97/68 EC (without fan), after 50 hours running, 3% tolerance, fuel Diesel EN 590
(2) Power derating conditions: a deduction of 3 percent from engine horsepower rating at standard SAE conditions shall be made for diesel engines for each 1000 ft. (305 m) altitude above 300 ft. (91.4 m) , a deduction of 1 percent from engine horsepower rating as corrected to standard SAE conditions shall be made for diesel engines for every 10°F (5.6°C) above 77°F (25°C) ambient temperature.

EXHAUST SYSTEM

ENGINE SPEED [rpm]	EXHAUST MAX TEMPERATURE [°C]	MAX ALLOWABLE BACK PRESSURE [kPa]	EXHAUST GASES FLOW [kg/h]
1760 rpm	640	5	230
2100 rpm	850	5	305
2200 rpm	840	5	325
2350 rpm	850	5	335
2600 rpm	830	5	350
2800 rpm	840	5	355
2940 rpm	860	5	390

LUBRICATION SYSTEM

LUBRICATION OIL MINIMUM PRESSURE @ IDLE SPEED	0,7 bar
LUBRICATION OIL MAXIMUM PRESSURE @ RATED SPEED	3,5 bar
LUBRICATION OIL MAXIMUM TEMPERATURE	120°C
LUBRICATION CIRCUIT FULL CAPACITY	12,8 l

BIMOTOR POWER SOLUTIONS

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ELECTRIC SYSTEM

VOLTAGE	12V	24V	(Optional config)
ALTERNATOR	90A	90A	(Optional config)
STARTER MOTOR	3 kW	3 kW	(Optional config)
BATTERIES PER BANK	1	2	(Optional config)
BATTERY CABLES MAX RESISTANCE	0,0013 ohm		
BATTERY CABLES MIN ALLOWED SIZE (3)			
1 M TO 3 M	AWG 0		
3 M TO 4 M	AWG 00		
4 M TO 5 M	AWG 000		
BATTERY CCA @ -18° C (4)	1000 A		
RESERVE CAPACITY (4)	430 min - 180 Ah		

(3) Length combination of positive and negative cables.
(4) Parameters evaluated according to SAE Standard J537.

AIR INDUCTION SYSTEM

ENGINE SPEED [rpm]	COMBUSTION AIR FLOW [kg/h]	MAX INLET TEMPERATURE [°C]	MAX ALLOWED RESTRICTION (CLEAN FILTER) [kPa]	MAX ALLOWED RESTRICTION (DIRTY FILTER) [kPa]
1760 rpm	215	55	3,5	6,5
2100 rpm	285	55	3,5	6,5
2200 rpm	305	55	3,5	6,5
2350 rpm	314	55	3,5	6,5
2600 rpm	328	55	3,5	6,5
2800 rpm	333	55	3,5	6,5
2940 rpm	366	55	3,5	6,5

COOLING SYSTEM

ENGINE SPEED [rpm]	REJECTED HEAT [kW]	REQUIRED RAW WATER FLOW @ 15°C [l/min]	REQUIRED RAW WATER FLOW @ 38°C [l/min]	ENGINE RADIATED HEAT [kW]
1760 rpm	43	38	42,5	11
2100 rpm	45	41	45	12
2200 rpm	47	41	45	14
2350 rpm	47	45	50	16
2600 rpm	48	45	50	18
2800 rpm	48	45	50	20
2940 rpm	49	45	50	20

THERMOSTAT	START OPENING	83°C
	FULL OPENING	95°C
PRIMARY COOLANT TEMPERATURE RANGE		83-95°C
PRIMARY COOLANT MAXIMUM TEMPERATURE		99°C
PRIMARY COOLANT LOW TEMPERATURE ALARM		35°C
PRIMARY COOLANT CAPACITY		11 l
PRIMARY COOLANT PRESSURE (CAP)		0,7 bar
SECONDARY CIRCUIT MAXIMUM PRESSURE		3,8 bar
RAW WATER TEMPERATURE ALARM		40°C

LIQUID HEATERS

COOLANT HEATER	1500W – 230V
LUBRICATION OIL HEATER	350W – 230V

FUEL SYSTEM

FUEL PUMP MAX INTAKE RESTRICTION	0 bar
MAX ALLOWABLE FUEL HEAD ABOVE FUEL PUMP	1 m
MINIMUM FUEL LINE INTERNAL DIAMETER	10 mm