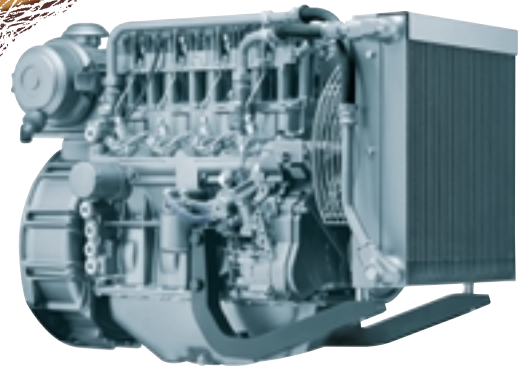


# 1011. The Genset Engine.



19-52 kVA at 1500/1800/3000 min<sup>-1</sup>



## The engine with external oil cooling system.

### These are the characteristics of the 1011 GEN:

- 3- and 4-cylinder naturally aspirated in-line engine.
- 4-cylinder turbocharged too.
- Displacement: 0.73 l / cylinder.
- Fully oil cooled (with conventional cooling system).
- Acoustically optimized crankcase.
- All servicing points on one side.
- Low vibrations.
- Electronic governor (option).
- Compact design and low weight.
- Global service network with over 3,000 locations.

### These are the benefits for you:

- ▶ Low noise emission. This eliminates the need for costly noise abatement measures.
- ▶ Long service intervals: 1.000 hours oil change intervals and low fuel consumption mean savings in operating costs.
- ▶ Low installation costs.
- ▶ Extremely high load acceptance ensures immediate power supply.
- ▶ Single fluid for both cooling and lubrication avoids corrosion and cavitation.
- ▶ High reliability and durability. Low maintenance costs and less wearing parts.

## ► Technical Data

Engine type		F3M 1011 F			F4M 1011 F			BF4M 1011 F	
Speed	min <sup>-1</sup>	1500	1800	3000	1500	1800	3000	1500	1800
Frequency	Hz	50	60	50	50	60	50	50	60
<b>Engine/genset rating<sup>1)</sup></b>									
Continuous power, ICN (COP) <sup>2)</sup>	kW	17.2	22.0	32.0	23.8	29.9	43.8	33.7	41.4
Prime power, ICN (PRP) <sup>3)</sup>	kW	18.0	23.1	33.5	24.9	31.3	45.9	35.3	43.3
Limited-time running power, IFN (LTP) <sup>4)</sup>	kW	19.0	24.3	35.3	26.2	32.9	48.1	37.1	45.6
Typical generator power output (COP) <sup>5)</sup>	kVA	19.0	24.0	35.0	26.0	33.0	47.0	37.0	45.0
Typical generator power output (PRP) <sup>5)</sup>	kVA	20.0	25.0	36.0	28.0	34.0	49.0	38.0	47.0
Typical generator power output (LTP) <sup>5)</sup>	kVA	21.0	27.0	38.0	29.0	36.0	52.0	41.0	49.0
<b>Basic engine data</b>									
Inertia moment J									
- Engine without flywheel	kg/m <sup>2</sup>	0.0748			0.0738			0.0754	
- Flywheel	kg/m <sup>2</sup>	1.2	1.2	1.2	1.2	1.2	1.2	1.71	1.71
Weight, engine with radiator	kg	285	285	285	320	320	320	342	342
<b>Governing</b>									
Governor mechanical		DEUTZ Governor			DEUTZ Governor			DEUTZ Governor	
- Speed droop (static)	%	4	4	4	4	4	4	4	4
Governor electronic		GAC	GAC	GAC	GAC	GAC	GAC	GAC	GAC
- Speed droop (static, option)	%	0	0	0	0	0	0	0	0
Control quality <sup>6)</sup>		M3/M4			M3/M4			M3/M4	
<b>Load acceptance</b>									
Recovery time									
at 80 % continuous power (COP)	sec.	1	1	0.3	1	-	-	2	2
at 100 % continuous power (COP)	sec.	1	1	0.3	1	-	-	2	2
<b>Fuel system</b>									
Specific fuel consumption at COP <sup>7)</sup>									
100 % load	g/kWh	217	217	234	214	214	235	212	205
75 % load	g/kWh	222	218	245	219	217	245	212	207
50 % load	g/kWh	240	235	280	238	233	280	228	218
25 % load	g/kWh	330	340	410	335	325	430	285	280
<b>Cooling system/cooling capacity</b>									
Cooling air volume	m <sup>3</sup> /h	1730	1730	2160	1730	1730	2160	2160	2160
Max. permissible air flow resistance	mbar	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Max. coolant temperature at engine outlet	°C	135	135	135	135	135	135	135	135
Heat radiation	kW	3.15	4.0	5.6	5.2	6.5	9.8	7.9	9.7
<b>Lubrication system</b>									
Lube oil consumption relative to fuel consumption at full load	ca. %	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.5
Lube oil specification	For further details on fuel specification see operation manual								
Lube oil volume, oil pan (max./min.)	l	5.5/4	5.5/4	5.5/4	10/9	10/9	10/9	10/9	10/9
Oil temperature max.	°C	130	130	130	130	130	130	130	130
Full-flow filter	No./l	1/0.2	1/0.2	1/0.2	1/0.2	1/0.2	1/0.2	1/0.2	1/0.2
Min. oil pressure (alarm)	bar	2.1	2.3	3.1	2.1	2.3	3.1	2.1	2.3

## ► Technical Data

Engine type		F3M 1011 F			F4M 1011 F			BF4M 1011 F	
Speed	min <sup>-1</sup>	1500	1800	3000	1500	1800	3000	1500	1800
Frequency	Hz	50	60	50	50	60	50	50	60
<b>Combustion air system</b>									
Combustion air volume (COP)	m <sup>3</sup> /h	80	95	160	110	130	220	140	180
Max. intake vacuum (filter clean)	mbar	10	10	25	10	10	30	10	10
<b>Exhaust system</b>									
Exhaust gas mass flow at full load (COP)	kg/h	100	120	195	136	160	275	168	215
Exhaust temperature at full load and 25°C ambient temperature	°C	490	525	580	480	525	600	545	510
Max. permissible exhaust backpressure	mbar	30	30	62	30	–	62	30	30
Exhaust flange	mm	45	45	45	45	45	45	45	45
TA-Luft (4000)	mg/nm <sup>3</sup>	no	no	no	no	no	yes	yes	yes
<b>Engine electrics</b>									
Electrical equipment:									
- Voltage	V	12	12	12	12	12	12	12	12
- Starter	kW	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
- Alternator	A/V	55/14	55/14	55/14	55/14	55/14	55/14	55/14	55/14
- Battery (min. capacity)	Ah	66	66	66	66	66	66	66	66
- Coolant preheating units	W	–	–	–	–	–	–	–	–
<b>Cold-start capability</b>									
Cold-start limit temperature:									
- with starting aid	°C	-30	-30	-30	-30	-30	-30	-30	-30
- without starting aid	°C	-10	-10	-10	-10	-10	-10	-10	-10
<b>Noise emission<sup>8)</sup></b>									
Sound power level	dB(A)/1pW	99	101	106	99,5	101	106,5	97,5	99,5
Sound pressure level at full load, 1 m distance	dB(A)	86,5	88	93,5	86,5	88	99,5	84,5	86,5

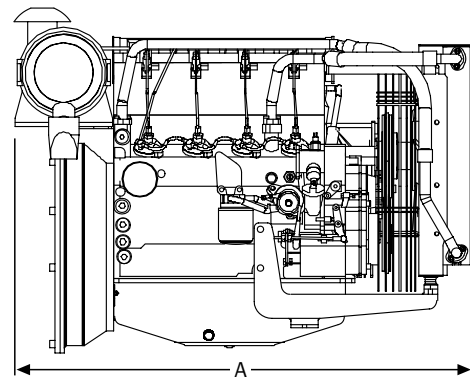
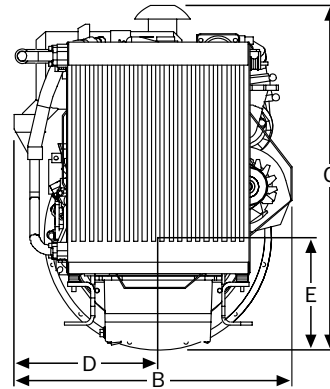
- 1) Power reduction caused by altitude and temperature possible. Power ratings without fan power requirement. For more details please contact DEUTZ.
- 2) Continuous power 100 % available at flywheel, no time limitation, plus 10 % extra power for governing purposes.
- 3) Prime power 100 %, permissible average power output equal to or below 60 %, no time limitation plus 5 % extra power for governing purposes.
- 4) Limited-time running power 100 %, which can be delivered during 500 running h/year, thereof max. 300 running h/year continuously, no overload permissible; the required extra power for governing purposes must be taken into account however.
- 5) Taking into account typical generator efficiency (0.9) and power factor  $\cos(\varphi) = 0.8$ .
- 6) Performance acc. to ISO 8528.
- 7) Fuel specification: see operation manual.
- 8) Without cooling system.

The values given in this data sheet are for information purposes only and not binding. The information given in the offer is decisive.

## ► Standard specification

- Standard engine:** ..... Basic parts
- Cooling system:** ..... Cooling system  
Pusher-type fan  
Guard  
V-belt guard
- Exhaust system components:** ..... Exhaust manifold (BF4 L/M 1011 F, Turbocharger (air inlet at flywheel end) and exhaust bend  
Counterflange (loose)  
Without exhaust silencer
- Filter:** ..... Dry air cleaner mounted for restriction indicator  
Restriction indicator (loose)  
Fuel filter
- Governor:** ..... Mech. governor  
Fine speed control
- Flywheel:** ..... Flywheel for 11.5" connection  
 $J=1.2 \text{ kgm}^2$  for  $n=1500/1800 \text{ min}^{-1}$ ,  
 $3000 \text{ min}^{-1}$  (FM 1011 F)  
 $J=1.8 \text{ kgm}^2$  for  $n=1500/1800 \text{ min}^{-1}$   
(BF4 L/M 1011 F)
- Adapter housing:** ..... SAE 3 housing
- Engine mounting:** ..... Rigid engine mounting, front end
- Engine electrics:** ..... Electric engine shutdown (de-energized for shutdown)  
Starter 12 V, 3.1 kW  
Alternator 14 V, 55 A  
Oil pressure switch (speed-dependent)  
Oil temperature sensor with switch contact  
Cable harness (mounted) with mating connector (loose)
- Miscellaneous:** ..... Painting  
Without operation manual

## ► Dimensions



Engine type		A	B	C	D	E
F3M 1011 F	mm	905	627	696	324	224
F4M 1011 F	mm	1032	629	740	326	245
BF4M 1011 F	mm	1034	629	781	326	245



Knowing it's DEUTZ.

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