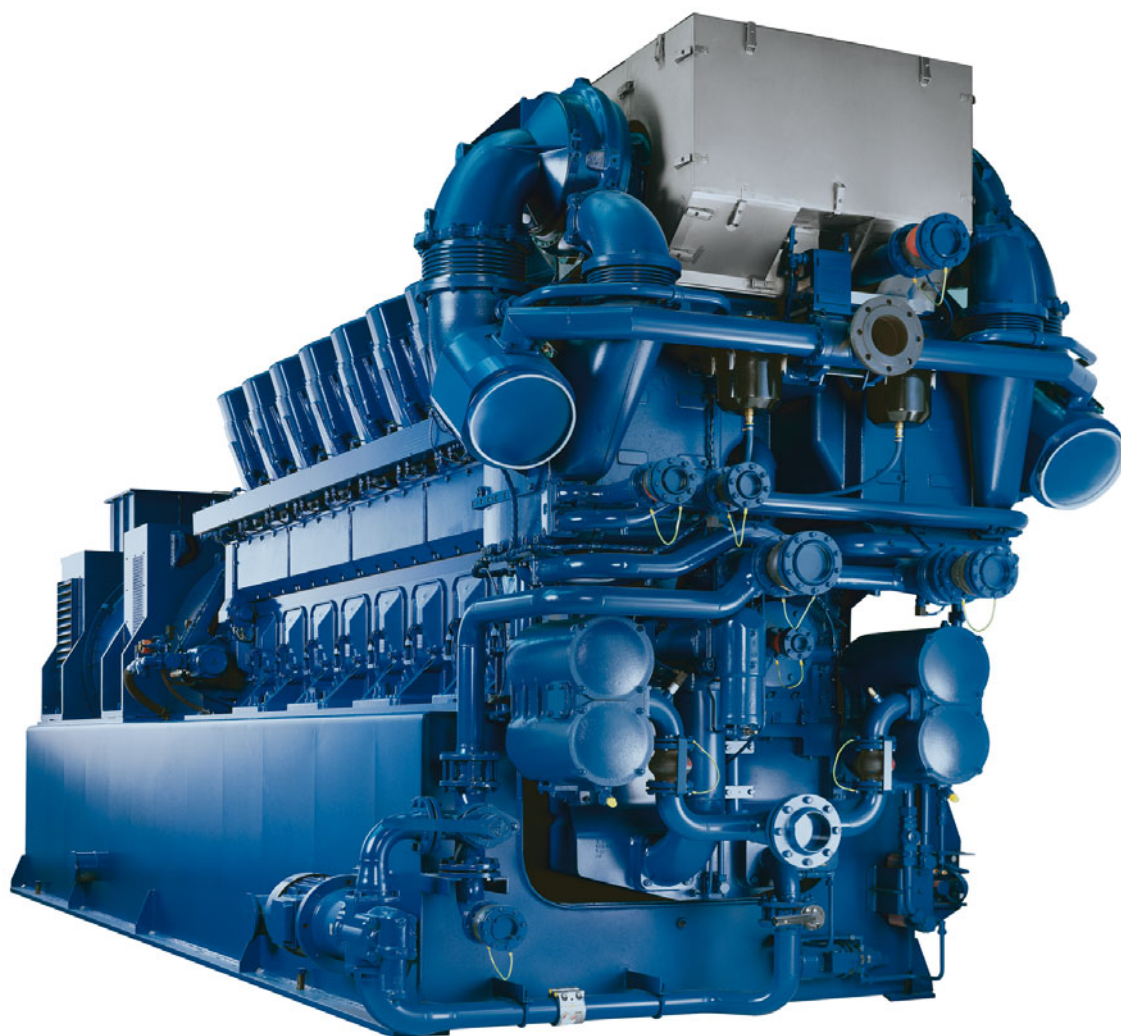


*DEUTZ POWER SYSTEMS*



**TCG 2032**

**3000 – 4000 kW at 1000 min<sup>-1</sup> (50 Hz)**

# Technical data 50 Hz – Natural gas applications

NO<sub>x</sub> <= 500 mg /m<sub>n</sub><sup>3</sup> <sup>1)</sup>

Minimum methane number MN 70  
dry exhaust manifolds

<b>Engine type</b>		<b>TCG 2032 V12</b>	<b>TCG 2032 V16</b>
Engine power <sup>2)</sup>	kW	3000	4000
Speed	min <sup>-1</sup>	1000	1000
Mean effective pressure	bar	17.7	17.7
Exhaust temperature	approx. °C	461	476
Exhaust mass flow wet	approx. kg/h	15657	20770
Combustion air mass flow <sup>2)</sup>	approx. kg/h	15142	20082
Combustion air temperature for engine with air preheater minimum/design	°C	10 / 35	10 / 35
Ventilation air flow <sup>3)</sup>	approx. kg/h	90535	118603
<b>Engine parameters</b>			
Bore/stroke	mm	260/320	260/320
Displacement	dm <sup>3</sup>	203.9	271.8
Compression ratio		12.0 : 1	12.0 : 1
Mean piston speed	m/s	10.7	10.7
Lube oil flow rate	m <sup>3</sup> /h	110	125
Lube oil content <sup>4)</sup>	dm <sup>3</sup>	1750	2200
Lube oil temperature engine inlet	°C	80	80
Typical mean lube oil consumption <sup>5)</sup>	g/kWh	0.3	0.3
<b>Generator</b>			
Efficiency <sup>6)</sup>	%	97.8	97.92
<b>Energy balance</b>			
Electrical power <sup>6)</sup>	kW	2934	3917
Jacket water heat	± 8 % kW	1063	1343
Intercooler LT heat <sup>7)</sup>	± 8 % kW	252	340
Exhaust cooled to 120 °C	± 8 % kW	1651	2294
Lube oil heat	± 8 % kW	355	476
Engine radiation heat	kW	190	250
Generator radiation heat	kW	66	83
Fuel consumption <sup>8)</sup>	+ 5 % kW	6995	9336
Specific fuel consumption <sup>8)</sup>	+ 5 % kWh/kWh	2.33	2.33
Electrical efficiency	%	41.9	42.0
Thermal efficiency	%	43.9	44.1
Total efficiency	%	85.8	86.1

## System parameters

		TCG 2032 V12	TCG 2032 V16
Engine jacket water flow rate min./max.	m <sup>3</sup> /h	80/100	105/130
Engine K <sub>VS</sub> -value <sup>9)</sup>	m <sup>3</sup> /h	89.0	93.0
Intercooler coolant flow rate	m <sup>3</sup> /h	55	65
Intercooler K <sub>VS</sub> -value <sup>9)</sup>	m <sup>3</sup> /h	57.0	57.0
Engine jacket water volume	dm <sup>3</sup>	430	570
Intercooler coolant volume	dm <sup>3</sup>	51	51
Engine jacket water temperature max. <sup>10)</sup>	°C	79/90	79/90
– with glycol <sup>10)</sup>	°C	(79/90)	(79/90)
Intercooler coolant temperature <sup>10)</sup>	°C	40/44.1	40/44.6
Exhaust backpressure min./max.	mbar	30/50	30/50
Maximum pressure loss in front of air cleaner	mbar	5	5
Gas flow pressure, fixed between <sup>11)</sup>	mbar	50...300	50...300
Air bottle, volume/pressure	dm <sup>3</sup> /bar	2000/30	2000/30

## Dimensions 50 Hz

### Genset

Length	mm	7800	8900
Width	mm	2700	2750
Height	mm	3700	3800
Dry weight genset	kg	41100	47600

## Noise emissions\* 50 Hz

Noise frequency band	Hz	63	125	250	500	1000	2000	4000	8000
<b>Engine type TCG 2032 V12</b>									
Exhaust noise 124 dB(A)	dB(lin)	126	127	124	122	117	115	113	104
Air-borne noise 104 dB(A)	dB(lin)	98	96	100	97	95	96	99	93
<b>Engine type TCG 2032 V16</b>									
Exhaust noise 122 dB(A)	dB(lin)	130	123	120	120	116	114	112	108
Air-borne noise 106 dB(A)	dB(lin)	93	102	103	98	99	99	98	100

Exhaust noise in 1 m,  $\neq 45^\circ$ ,  $\pm 2.5$  dB(A)

Air-borne noise in 1 m from the side,  $\pm 1$  dB(A)

\* Values apply to natural gas applications, measured as noise pressure level.

1) Exhaust emissions with oxidizing catalyst:

NO<sub>x</sub> < 0.50 g NO<sub>2</sub>/m<sup>3</sup> dry exhaust gas at 5% O<sub>2</sub>

CO < 0.3 g CO/m<sup>3</sup> dry exhaust gas at 5% O<sub>2</sub>

Formaldehyde < 0.06 g/m<sup>3</sup> dry exhaust gas at 5% O<sub>2</sub>

2) Engine power ratings and combustion air volume flows acc. to ISO 3046/1

3) Intake air flow at delta T = 15 K including combustion air

4) Without pipes and heat exchangers

5) This values are the mean lube oil consumption between maintenance steps which include an E 60 service. Also the procedures defined in the TPI 1111-E-06-02 and the Technical Circular TR 0199-99-2105 are to be carefully followed.

6) At 50 Hz, U = 11 kV, power factor = 1

7) At 40 °C water inlet

8) With a tolerance of +5%

9) The K<sub>VS</sub>-value is the parameter for the pressure loss in the cooling system (= flowrate for 1 bar pressure loss)

10) Inlet /outlet

11) Consider TR 0199-99-3017

Data for special gas and dual gas operation on request.

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

The information given in the offer is decisive.

### Characteristics:

State-of-the-art four-stroke Otto gas engines of V-configuration | Single cylinder heads with four-valve technology | Non-wearing high-voltage ignition system | Turbocharging and two-stage intercooling | Pearl® exhaust system located in V-space (Pulse Energy Advanced Recovery Line) | TEM EVOLUTION SYSTEM (Total Electronic Management) for control of gas combustion as well as for monitoring and control of engine generator set with optional integration of peripheral and auxiliary equipment

### Your benefits:

- Extremely low operating costs thanks to high efficiency and excellent specific fuel and oil consumption figures.
- Innovative repair concept with easily exchangeable cylinder unit with cylinder head, piston, connecting rod, liner enhances ease of service.
- The extremely slim engine with compact dimensions, low noise emissions and excellent smooth-running characteristics guarantee minimized installation costs.
- The combination of high power and low weight provides an exceptional power-to-weight ratio. Precise governing and control of the combustion process ensures a very high level of speed stability.
- Exhaust emission levels which comply with the most stringent European standards and represent the best available control technology world-wide.