

Series 4000
Diesel Engines
for Stationary Power Generation

The New Series 4000!

Cleaner.
More Economical.
More Powerful.



Supplying your energy needs

MTU engines are the basis for **reliable and economical power generation solutions**.

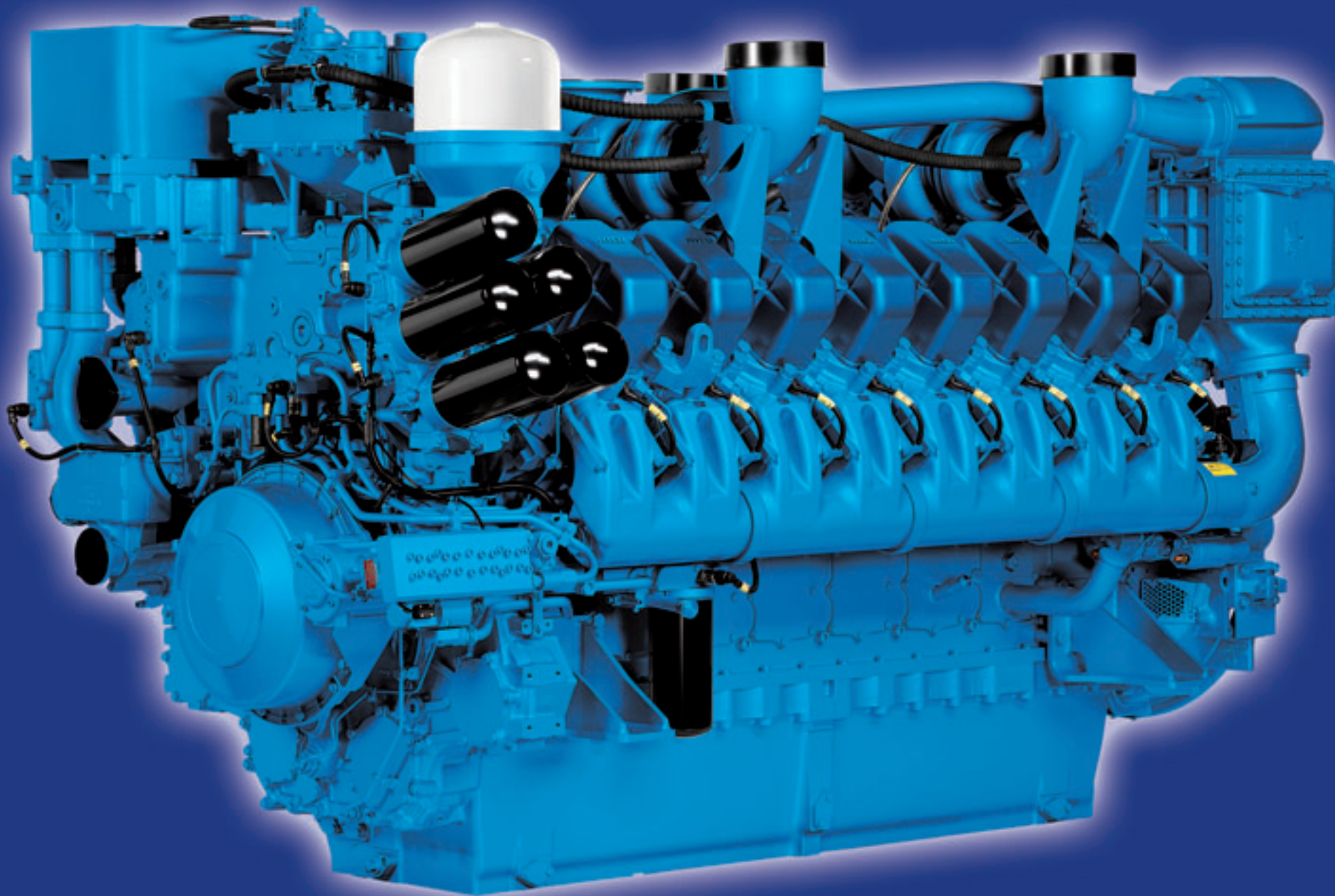
The enhanced-performance Series 4000 offers impressively low fuel consumption, low emissions and long service intervals.

The extensive choice of integrated accessories also helps you to reduce the engineering complexity.

The electronic engine management system is capable of performing a comprehensive range of control and monitoring functions, not only for the engine, but also for the installation.

This will substantially reduce planning complexity and will make system control simpler and more cost effective.

With the comprehensive choice of power outputs, the Series 4000 engines offer the optimum solution for all applications.



Your benefits:

Minimal assembly and engineering work

- > Comprehensive range of accessories (e.g. air filters, exhaust compensators, engine and generator mountings, etc.)
- > Optimized interface configuration
- > Bespoke system and installation planning

Optimum operating characteristics

- > Low vibration properties
- > Automatic engine protection if ambient conditions change (ESCM – Engine Site Condition Management System)
- > Outstanding load response characteristics
- > High stability of speed and frequency

Environmentally sound

- > Leaders in national and international emissions standards compliance
- > Low fuel and lubricant consumption
- > Low noise and vibration output
- > Finished in ecologically safe paints

High system availability and reliability

- > Long service life
- > 24-hour support service
- > Global customer service network with $\geq 1,100$ service centers
- > Electronic engine management system with self-diagnosis function and remote diagnosis capability

Low life-cycle costs

- > Attractive price
- > Low fuel consumption
- > Low oil consumption
- > Ease of maintenance
- > Long TBO
- > REMAN parts

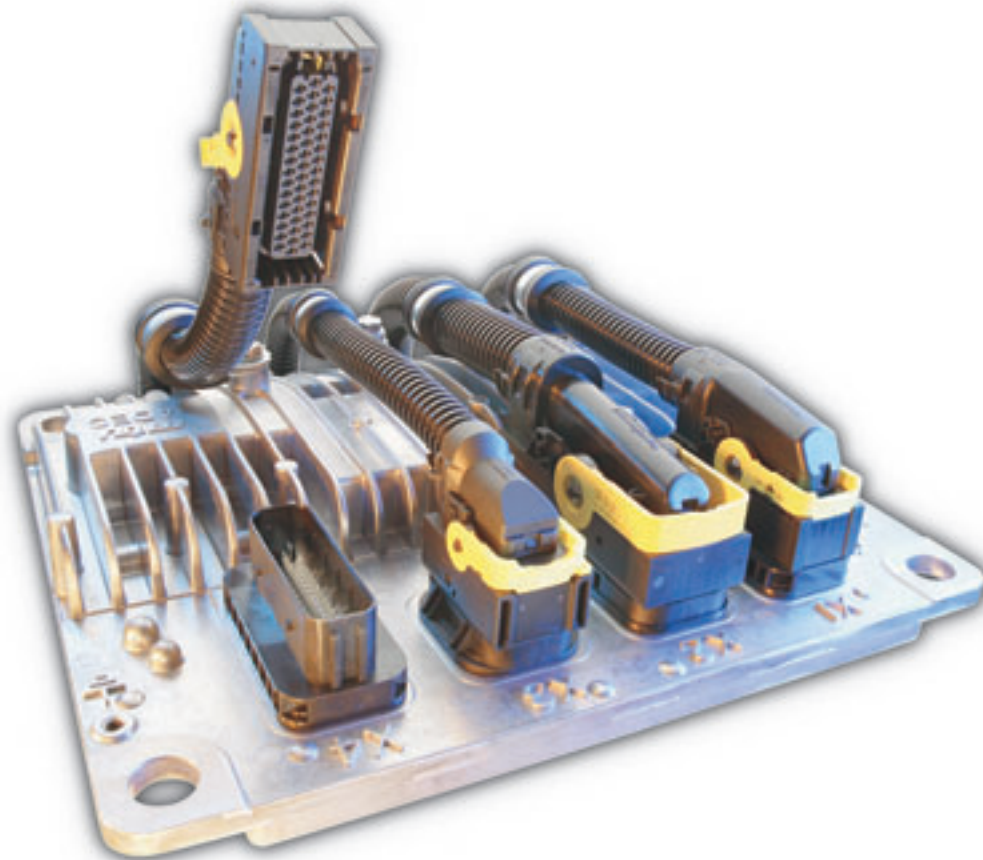
Series 4000 technology: Superior in every detail.

ADEC (Advanced Diesel Engine Controller) engine management

Electronic engine management controller with enhanced processor performance for economical fuel consumption and compliance with current exhaust emissions requirements. Suitable for multipoint injection. Compatible with a variety of fuel injection and injector types. Tough, vibration-resistant design with wide operating temperature range.

Benefits:

- > Optimum operating characteristics
- > Outstanding load response characteristics
- > Maintenance-free design

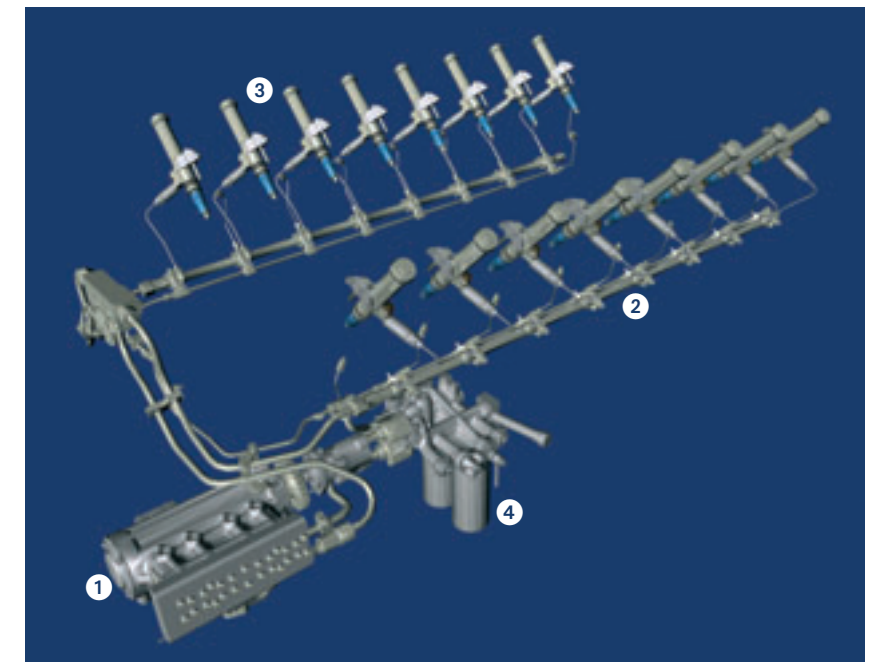


Common-rail injection system

Electronically controlled fuel injection system with high-pressure pump and unit injectors with pressure accumulator

Benefits:

- > Optimum control of injection timing, volume and pressure
- > Low exhaust emissions
- > Low fuel consumption across entire operating range
- > No mechanical adjustments required
- > Outstanding startup and load response characteristics
- > Excellent reliability
- > Exemplary engine smoothness
- > No loss of power at high fuel temperatures
- > Optimum cold starting characteristics



- ❶ High-pressure pump
- ❷ Common rail
- ❸ Injector with high-pressure accumulator
- ❹ Fuel filter



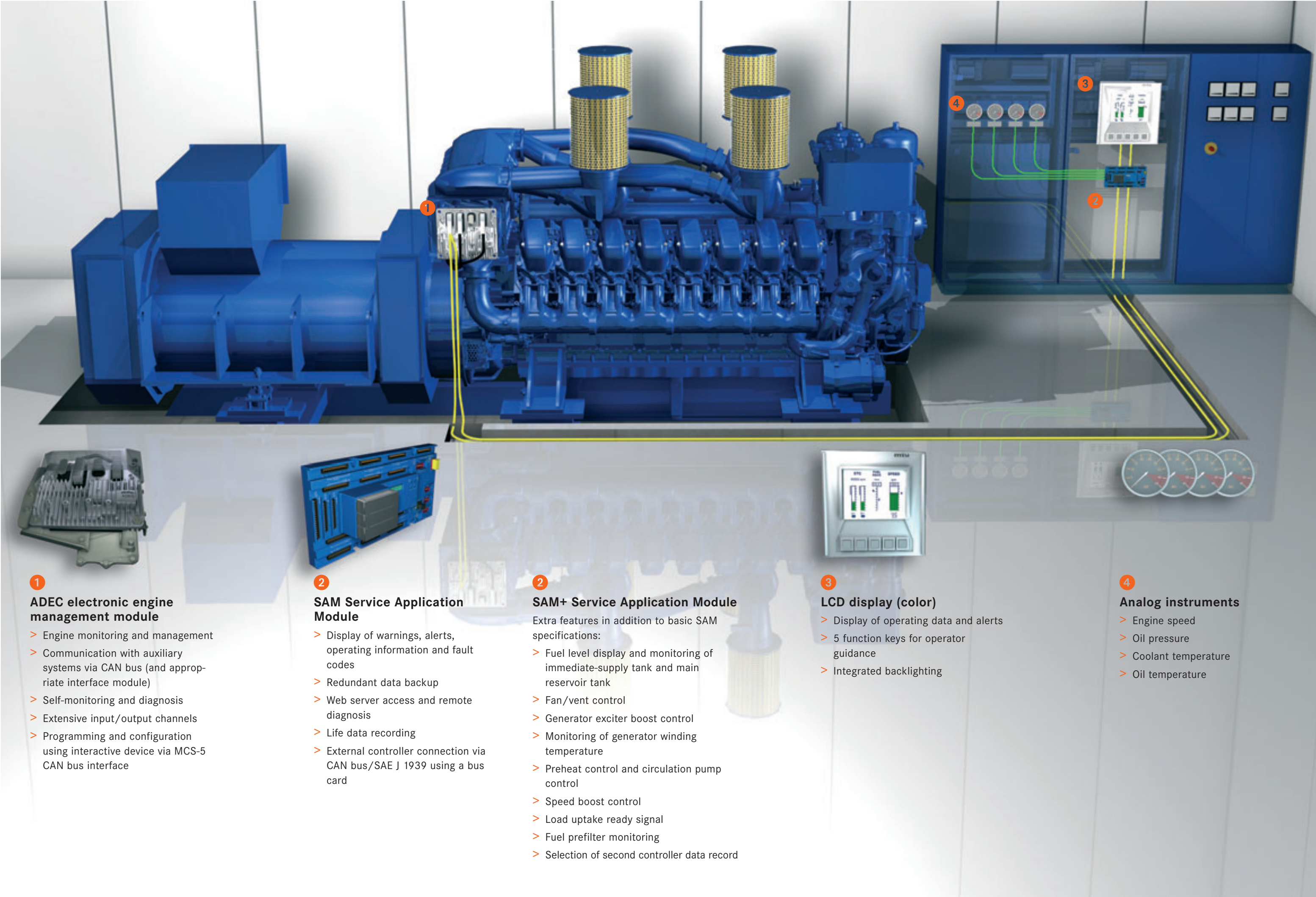
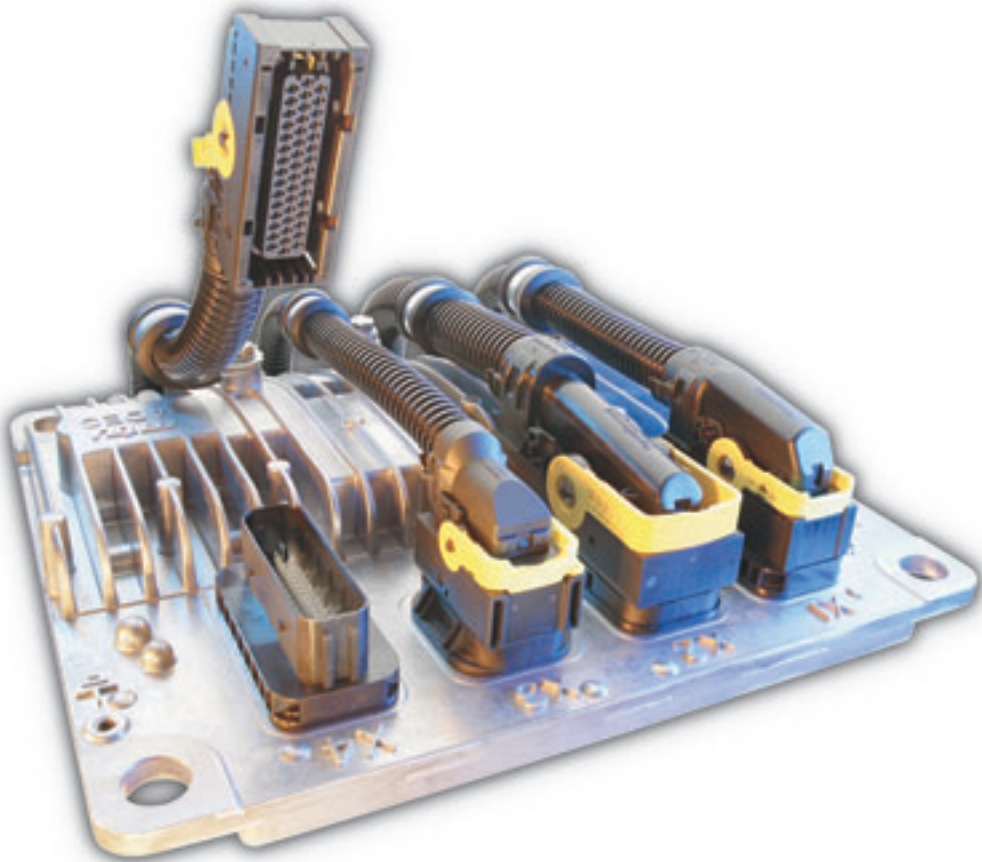
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1

ADEC electronic engine management module

- > Engine monitoring and management
- > Communication with auxiliary systems via CAN bus (and appropriate interface module)
- > Self-monitoring and diagnosis
- > Extensive input/output channels
- > Programming and configuration using interactive device via MCS-5 CAN bus interface

2

SAM Service Application Module

- > Display of warnings, alerts, operating information and fault codes
- > Redundant data backup
- > Web server access and remote diagnosis
- > Life data recording
- > External controller connection via CAN bus/SAE J 1939 using a bus card

2

SAM+ Service Application Module

Extra features in addition to basic SAM specifications:

- > Fuel level display and monitoring of immediate-supply tank and main reservoir tank
- > Fan/vent control
- > Generator exciter boost control
- > Monitoring of generator winding temperature
- > Preheat control and circulation pump control
- > Speed boost control
- > Load uptake ready signal
- > Fuel prefilter monitoring
- > Selection of second controller data record

3

LCD display (color)

- > Display of operating data and alerts
- > 5 function keys for operator guidance
- > Integrated backlighting

4

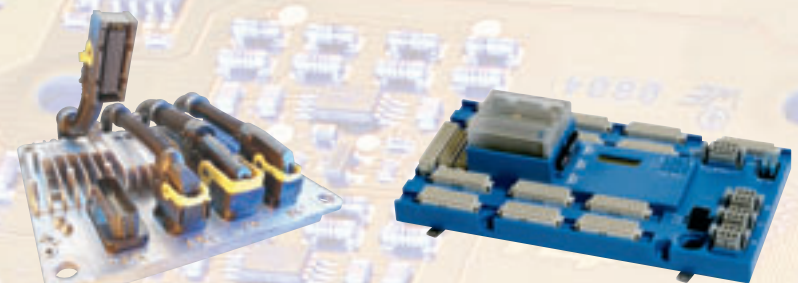
Analog instruments

- > Engine speed
- > Oil pressure
- > Coolant temperature
- > Oil temperature

Control, monitoring, management.

Electronic management, monitoring and control system with speed/cylinder charge modulation (alternatively) and integrated safety and self-diagnosis functions. Automatic engine protection function (ESCM) in response to variation of ambient parameters. Expandable by the addition of color display and extended Service Application Module functions (SAM+). Plug-and-run connectors, automatic starter and load profile recorder. Consumption-optimized or emissions-optimized engine tuning. Complete with engine sensors and wiring. Combinable with all widely used genset control systems.

The electronic management, consisting of ADEC and SAM, is capable of performing extensive control and monitoring functions for the installation. As a result, planning complexity is substantially reduced and system control is simpler and cheaper.



ADEC

SAM

Technical data

Series 4000-03 Diesel Engines with external Charge-air Cooling	
Configuration	12V, 16V, 20V - 90°
Bore/Stroke	mm170/210
Cylinder capacity	l/cyl.4.77
Fuel specification	EN 590; Grade-No. 1-D/2-D, (ASTM D975-00)

Application group	Prime power 3B	Standby power 3D
Engine model	Rated power kW (bhp) - 1500 rpm (50 Hz)	
Optimization	☒ or ①	☒
12V 4000 G23	1420 (1904)	1575 (2112)
12V 4000 G63	1575 (2112)	1750 (2347)
16V 4000 G23	1798 (2411)	1965 (2635)
16V 4000 G63	1965 (2635)	2185 (2930)
20V 4000 G23	2200 (2950)	2420 (3245)
20V 4000 G63	2420 (3245)	2670 (3580)
20V 4000 G63L	2590 (3475)	2850 (3822)

Engine model	Rated power kW (bhp) - 1800 rpm (60 Hz)	
Optimization	☒ or ③	☒ or ③
12V 4000 G43	1520 (2038)	1736 (2328)
12V 4000 G83	1736 (2328)	1910 (2561)
16V 4000 G43	2020 (2709)	2280 (3057)
16V 4000 G83	2280 (3058)	2500 (3352)
20V 4000 G43	2490 (3340)	2740 (3674)
20V 4000 G83	2740 (3674)	3010 (4036)
20V 4000 G83L	3010 (4036)	3490 (4680)

- Optimizations:** ① Exhaust emission TA-Luft (for standby power)
 ③ Exhaust emission EPA 40 CFR 89, Stage 2
 ☒ Fuel consumption

Application	Definition	
3B	Continuous operation with variable load	Load factor: < 75 % Operating hours/year: unrestricted Overload: 10 % capability (ICXN)
3D	Standby operation with variable load	Load factor: < 85 % Operating hours/year: max. 500 h Overload: Fuel stop (ICFN)

Reference conditions	
Ambient air temperature	25 °C
Charge air coolant temp.	55 °C
Charge air coolant temp.	45 °C (with EPA, Tier 2)
Ambient air pressure:	1000 mbar
Height above sea level	100 m
Rated power vailable up to	
Ambient air temperature	40 °C
Height above sea level	400 m

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