



*Monitoring unit BE 1 for MAN marine Diesel engines*

*Überwachungseinheit BE 1 für MAN-Schiffsdieselmotoren*

*Unidad de control BE 1 para motores marinos Diesel MAN*

*Unité de surveillance BE 1 pour moteurs Diesel marins MAN*

*Impianto di sorveglianza BE 1 per motori marini Diesel MAN*



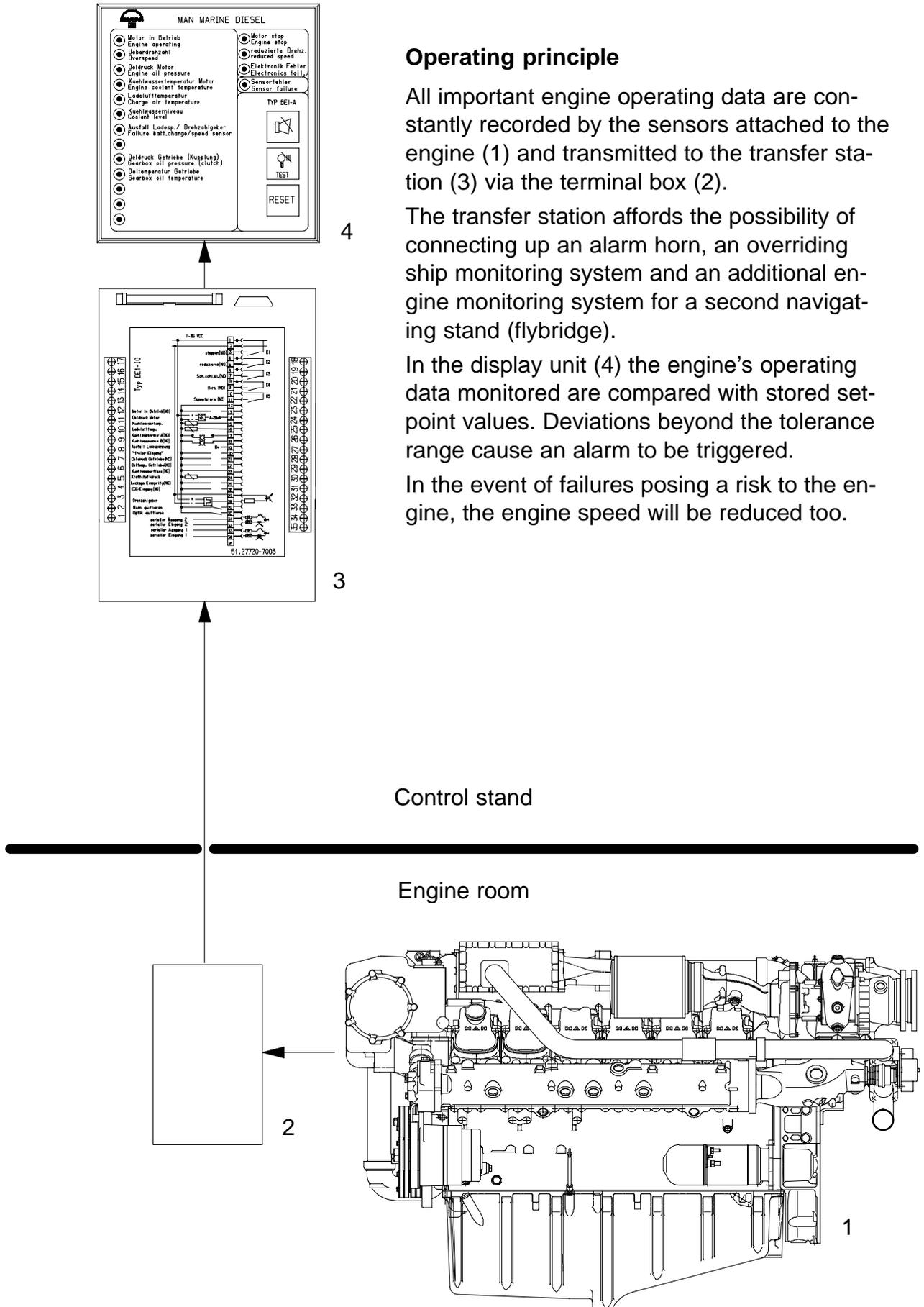
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Monitoring unit  
for MAN marine diesel engines





Schematic diagram of data transfer



Operating principle

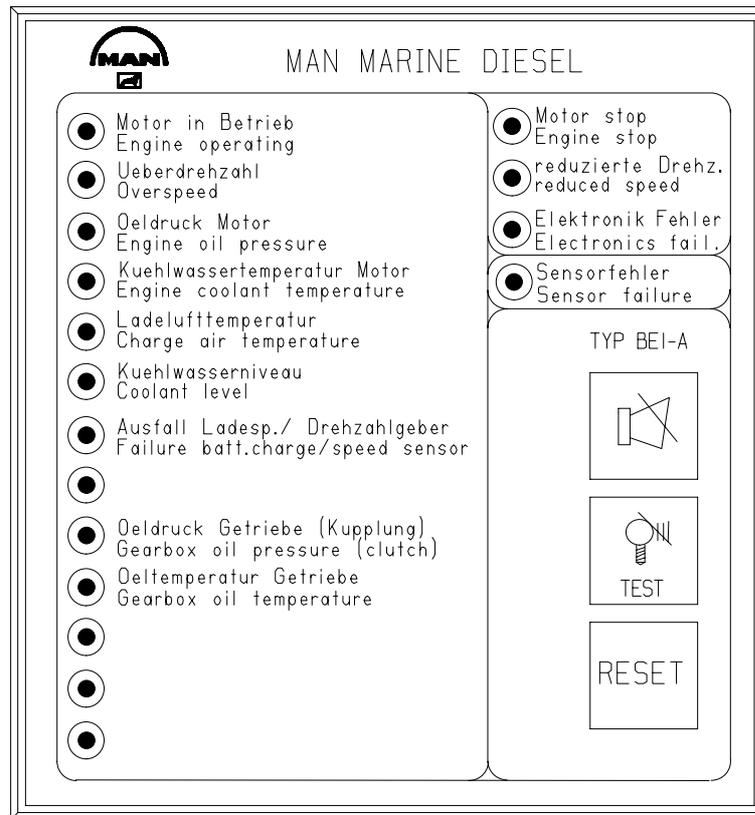
All important engine operating data are constantly recorded by the sensors attached to the engine (1) and transmitted to the transfer station (3) via the terminal box (2).

The transfer station affords the possibility of connecting up an alarm horn, an overriding ship monitoring system and an additional engine monitoring system for a second navigating stand (flybridge).

In the display unit (4) the engine's operating data monitored are compared with stored set-point values. Deviations beyond the tolerance range cause an alarm to be triggered.

In the event of failures posing a risk to the engine, the engine speed will be reduced too.

### Display and operating unit of the engine monitoring system



The basic version of the engine monitoring system monitors the following functions:

- Engine in operation
- Engine speed (overspeed)
- Engine oil pressure (speed-dependent characteristic)
- Coolant temperature
- Charge-air temperature
- Coolant level
- Charging voltage of alternator
- Electronics fault (active only if engine is equipped with electronically controlled diesel injection = EDC)

In addition, it provides the possibility of controlling the following functions:

- Gearbox oil pressure (active only if monitor is fitted to gearbox and is wired)
- Gearbox oil temperature (active only if monitor is fitted to gearbox and is wired)

Brief description of the system:

The engine monitoring system is suitable both for engines with mechanical and for engines with electronically controlled diesel fuel injection.

The sensors for the engine monitoring system are attached to the engine and wired as far as to a central plug. The cable from the engine (flywheel end) to the plug is approx. 3 metres in length.

In gearboxes supplied by MAN the sensors for the gearbox monitoring system are also wired as far as to the central plug.

The terminal box is fitted in the engine room and connected to the aforementioned central plug by means of its 3 m long connecting cable.

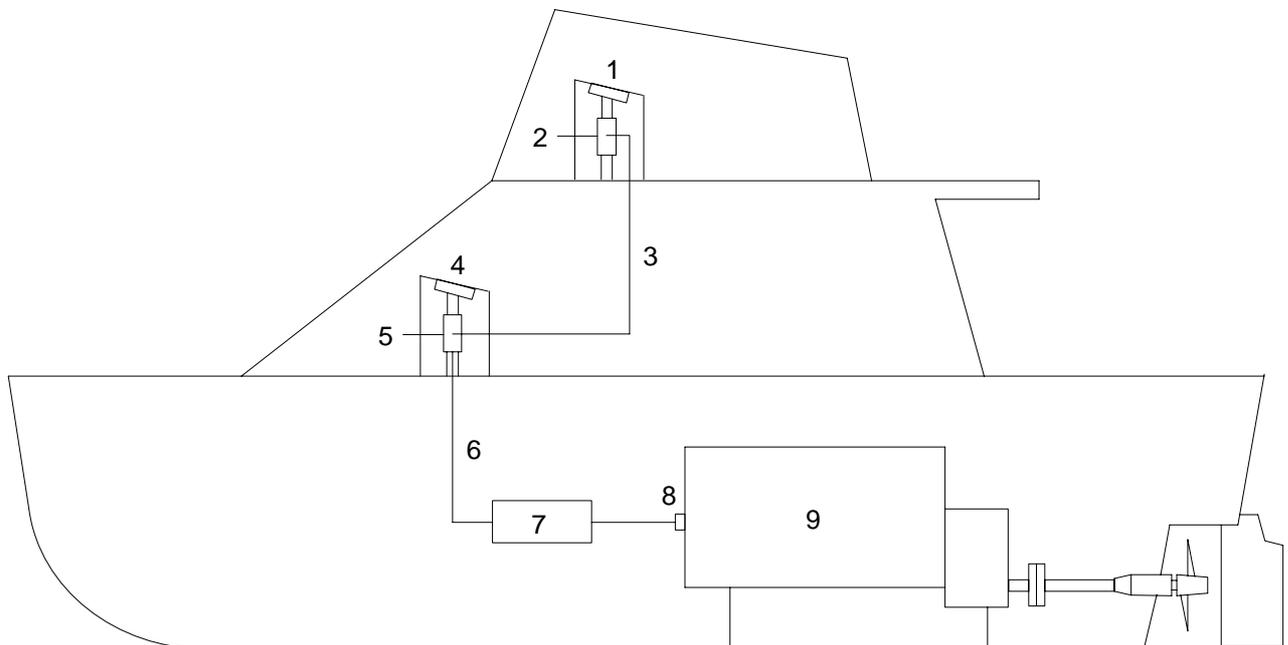
If the gearbox is fitted by the shipyard, the sensors for the gearshifting oil pressure of the clutch and for the gearbox oil temperature may also be connected up to the engine monitoring system (see gearbox monitoring system on page 18)

The terminal box is fitted in the engine room and connected up to the central plug by means of the aforementioned engine cable.

The connecting cable of the monitoring unit in the main navigating stand is connected up to the terminal box.

Available on request, a monitoring unit for the secondary navigating stand is triggered from the monitoring unit in the main navigating stand via serial data transfer.

The check lamps are dimmed automatically via an installed photocell.



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|--|--|
| 1 Display unit (slave)   | 6 25-pole connecting cable with plugs at both ends |
| 2 Transfer station (slave)   | 7 Terminal box                                     |
| 3 4-pole connecting cable (supplied and installed by the shipyard) | 8 Central plug                                     |
| 4 Display unit (master)  | 9 Engine   |
| 5 Transfer station (master)  |  |