

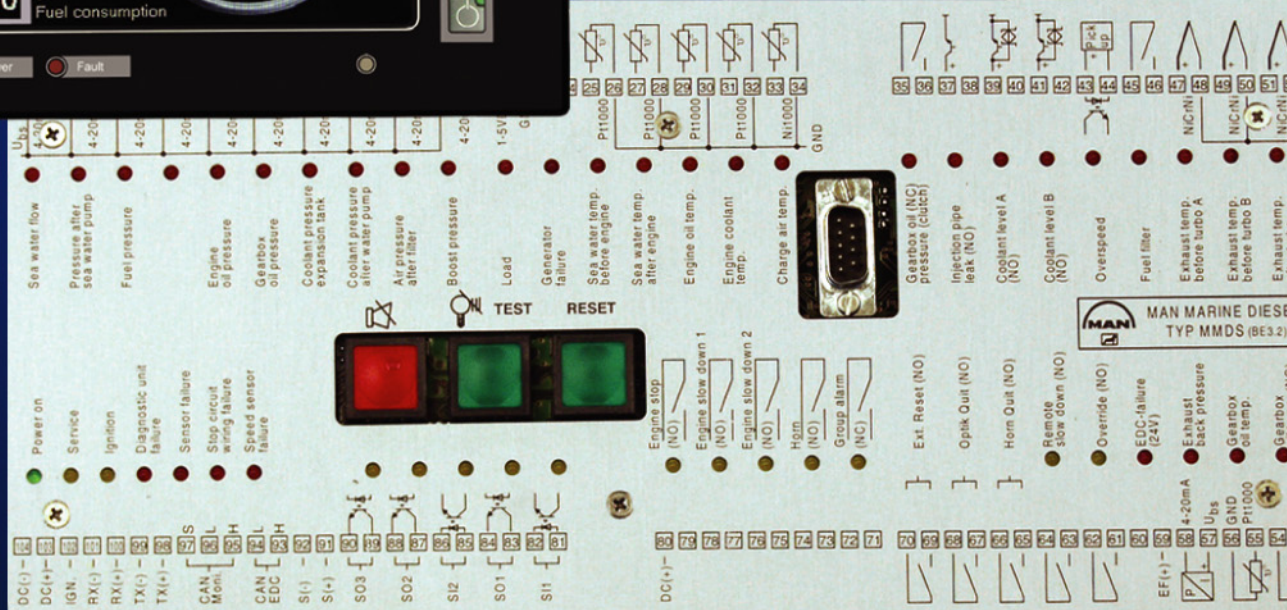
Repair Manual



MAN-Monitoring Diagnostic System (MMDS) Marine Diesel Engines

D 28 in-line and V marine engines with EDC
D 28 V marine engines with mechanical governor

Description, checking, interfaces



Dear Customer

This manual is intended to help you:

- Familiarise yourself with the components of the MAN Monitoring Diagnostic System (MMDS for short)
- Recognise the interaction of the individual MMDS components
- Install the system correctly in the ship
- Rectify faults and malfunctions

This manual must be read together with Publication 51.99598–8043 “Electronically Controlled Diesel Injection in Conjunction with MAN Monitoring Diagnostic System (MMDS)”.

This Publication was devised under the assumption that its readers will have the necessary basic knowledge of handling and working with marine engines and their electrical systems.

Best regards

MAN Nutzfahrzeuge Aktiengesellschaft
Nuremberg Plant

Since our products are in continuous development, we reserve the right to make technical modifications.

© 2003 MAN Nutzfahrzeuge Aktiengesellschaft

Reprint, duplication or translation, as a whole or in part without the written approval of MAN is prohibited. MAN reserves all rights accorded by the relevant laws on copyright.

	Page
Safety information	4
Layout of MAN Monitoring Diagnostic System (MMDS)	7
System description	14
Location of sensors	
Location of sensors for combustion air system	18
Location of sensors for combustion air system	19
Location of sensors for cooling system	22
Location of sensors for cooling system	23
Location of sensors for lube oil system	24
Location of RPM sensors	25
Testing sensors	
Sensors for pressure measurement	26
Sensors for temperature measurement	27
Sensors for coolant level	31
Testing three-phase generator	32
Testing sensors engines with mechanical control	
RPM sensor Hall-HT: 51.27120-0010	33
Boost pressure sensor: 51.27421-0125	34
Coolant temperature sensor: 51.27421-0150	34
Charge-air temperature sensor: 51.27421-0103	34
Testing sensors special equipment	
Sensors for engine monitoring	35
Sensors for gearbox monitoring	35
MMDS central diagnostic unit in terminal box	
Special variant for D 2876 LE 4.. in 12-Volt version	36
Voltage converter MMDS-DC 12 for 12-Volt version	37
Central diagnostic unit	42
Alarm and status indications	44
Pre-alarm, master alarm, sensor failure, system failure	45
Sensor failure	46
System failure	46
Relay outputs	48
Engine monitoring	50
Safety function	51
Storage of alarms and sensor failures	53
Terminal box with MMDS	55
Analog indicating instruments (4–20 mA) and their testing (serial / bus system)	
Connecting analog instruments	58
Tachometer with operating hours meter: 51.27102-6001	59
Indicating instrument for engine oil pressure: 51.27410-6002	60
Indicating instrument for gearbox oil pressure: 51.27410-6003	61
Indicating instrument for coolant temperature: 51.27401-6005	62
Indicating instrument for engine oil temperature: 51.27401-6006	63
Indicating instrument for battery voltage (voltage gauge): 51.27302-6001	64
Indicating instrument for exhaust-gas temperature: 51.27401-6002	65

	Page
MMDS-LC display unit (serial / bus system)	
Function description of MMDS-LC display unit	66
Design of MMDS-LC display unit	67
Installation of MMDS-LC display unit	69
MMDS-LC display units function and operation (serial / bus system)	73
MMDS-LC display unit programming the ship's alarms (serial / bus system)	83
MMDS-L display unit (serial / bus system)	87
MMDS-SD serial distribution box (serial / bus system)	93
Function of serial distribution box 51.27720–7007	93
Installation of MMDS-SD serial distribution box	95
MMDS-DA digital / analog converter (serial / bus system)	98
Engine room panel of the diagnostic system MMDS (serial / bus system)	102
MMDS-CLC 6.3 colour display (CAN bus system)	
Description	104
Fitting and installation	108
Operating function and configuration	111
Technical data	113
Alarms	114
Analog display instruments (CAN bus system)	120
System	120
CAN master tachometer	121
European slave instruments (bar / 5C)	126
Commissioning	131
Connecting cables	138
Circuit diagram	
Circuit diagram for engines with EDC and MMDS	143
EDC diagram with MMDS	145
Connection diagram for engine with EDC and MMDS	147
Circuit diagram for engines with mechanical governors and MMDS	149
Circuit diagram for engines with mechanical governors and MMDS	151
Circuit diagram for engines with EDC and MMDS (12V)	153
Circuit diagram for engines with EDC and MMDS (12V)	155
Wiring of individual components of MMDS	157
Index	159