

Engine Control Unit MS 12

www.bosch-motorsport.com



- ▶ 12 injection output stages
- ▶ For piezo injectors
- ▶ 78 data inputs

The MS 12 is the high-end ECU for Diesel engines. This ECU offers 12 Piezo injection power stages for use in up to a 12 cylinder engine. Various engine and chassis parameters can be measured with a high number of input channels. All measured data can be transferred via FireWire interface to an optional flash card data logger. Gear box control strategies are optional.

Application

Engine layout	Max. 12 cyl.
Injector type	Piezo injectors
Control strategy	Quantity based
Injection timing	2 pilot injections 1 main injection 1 post injection
Turbo boost control (incl. VTG)	Single or Twin-Turbo
Lambda measurement	
Traction control	
Launch control	
Gear cut for sequential gearbox	
Gearbox control	
Speed limiter	

Optional function packages available

Interface to Bosch Data Logging System

Max. vibration

Vibration profile 1 (see Appendix or www.bosch-motorsport.com)

Technical Specifications

Mechanical Data

Aluminum housing

5 connectors in motorsport technology with high pin density, 242 pins

Each connector individually filtered.

Vibration damped circuit boards

8 housing fixation points

Size 240 x 200 x 57 mm

Protection Classification IP67 to DIN 40050, Section 9, Issue 2008

Weight 2,500 g

Temperature range -20 to 85°C

Electrical Data

Power consumption w/o inj.	Approx. 5 W at 14 V
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Power consumption at 6,500 rpm	Max. 160 W at 14 V
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Inputs

6 inputs for thermocouple sensors (e.g. exhaust gas temperature)
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2 lambda interfaces LSU

4 inputs for wheel speed sensors; basic design for inductive sensors
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2 gear box speeds

4 inputs for turbo speed sensors; basic design for inductive sensors
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2 inputs for inductive crankshaft sensor
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1 input for Hall-effect camshaft sensor

3 system inputs 0 to 5 V

16 PT1000

32 universal inputs 0 to 5 V, switchable pull-up
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3 digital inputs

2 LVDT sensor interfaces

1 SSI interface

Outputs

12 injection power stages

24 power stages low side

2 power stages for lambda heater

6 H-bridges

2 sensor supplies 5 V/system use

3 sensor supplies 5 V/300 mA

3 sensor supplies 5 V/300 mA or 10 V/100 mA

Software Tools

WinDarab Analysis Software	On request
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Environment (not included)

Programming interface MSA-Box II	F 02U V00 327-03
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Data logger C 60	F 02U V00 875-03
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Display DDU 7	F 02U V01 130-04
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Display DDU 8	F 02U V00 873-05
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Mating Connectors (not included)

Mating Connector I AS 6-18-35 SA	F 02U 000 473-01
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Mating Connector II	F 02U 000 474-01
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AS 6-18-35 SB

Mating Connector III AS 6-18-35 SC	F 02U 000 475-01
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Mating Connector IV AS 6-18-35 SN	F 02U 000 472-01
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Mating Connector V AS 6-12-35 SD	F 02U 000 445-01
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Piezo Specific Functions**Voltage Control**

Rail pressure dependent precontrol of the voltage difference between cut off voltage and stationary actuator voltage.

Closed-loop voltage control, injector individual.

Voltage precontrol to improve dynamic behavior.

Discharging Time Control

Voltage dependent precontrol of discharging current.

Closed-loop discharging time control, injector individual.

Discharging time precontrol to improve dynamic behavior.

IVA Injector Voltage Adjustment

Determination of injector voltage demand at reference rail pressure during injector inspection in plant before IQA-measurement.

Injector assignment of voltage setpoint curves within the ECU according to injector's IVA class.

Temperature Compensation

Determination of the temperature dependent changes of voltage demand.

Definition of a temperature dependent correction factor.

Multiplicative correction of the voltage set point.

Installation Notes

Internal battery for data preservation included.

Required service interval 12 months (internal battery is replaced).

Depending on your experiences with calibration of ECUs we recommend calibration support from Bosch Motorsport.

Please remember that the mating connectors and the programming interface MSA-Box II are not included and must be ordered separately.

Communication

2 K-line serial interfaces

5 CAN interfaces (dash, application, customer use, switchable CAN load resistor)

2 FireWire interfaces for external communication

Ordering Information

Engine Control Unit MS 12

Order number **on request**

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