Motronic MS 3.1

The MS 3.1 is the first Bosch engine management system in full hybrid technique and for engines up to 6 cylinders. Two independent circuits are available for vibration knock detection and knock control. Injection time, injection end timing and ignition timing are calculated from basic maps and can be corrected by different engine parameters. Also two closed loop wide range lambda circuits are available. An external data logger or a DDU can be connected via CAN interface.

Mechanical Data	
Extremely small and flat aluminium pressure casting housing	
Connectors with high pin density	
Extremely shock and vibration proof hybrid technology	
Four housing fixation points	
Size	120 x 90 x 40 mm
Weight	250 g

Electrical Data	
In general	
2 microcontrollers with 16 bit organisation calculation capacity 20 MIPS	
Inputs	
2 lambda LSU 4 interfaces	
3 analog inputs 0 ... 5 V for water temperature, oil temperature, intake air temperature	

Functionality

Engine management system for 4- and 6-cylinder engines

Sequential fuel injection

Ignition timing

Lambda control

Knock control

Fuel cut off

Component diagnosis

Conditions for Use

ECU temperature	-40 ... 125 °C
Max. power consumption	10 W at 14 V
Max. vibration	Vibration Profile 3
(see Appendix or www.bosch-motorsport.com)	

3 analog inputs 0 ... 5 V for oil pressure, fuel pressure, ambient pressure

1 analog input 0 ... 5 V for throttle position sensor

1 digital input for laptrigger

1 digital input for wheel speed sensor

1 input for inductive crankshaft sensor

1 input for Hall-effect camshaft sensor

2 knock sensor interfaces

Outputs

6 injection power stages with diagnosis interface

2 high current power stages (8 A) with diagnosis interface for LSU heating

6 ignition power stages

Sensors supply output	5 V/100 mA
Separate supply output for throttle position sensor	5 V/100 mA

2 power stages (1 A) for main relay and fuel pump relay control

Communication interfaces

1 K-line serial interface

1 CAN interface for external communication

Accessories

KIC2-standard connector	**B 261 206 859**
KIC2-diagnosis connector with ignition bridge	**B 261 206 866**
KIC2-diagnosis connector without ignition bridge	**B 261 206 867**

Connectors and Cables

Connector Loom I	**D 261 205 139**
Connector Loom II	**D 261 205 140**

Application Hints

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

Part Number

MS 3.1 incl. Modas for notebook	**B 261 208 245-01**