

Engine Control Unit MS 5.0

www.bosch-motorsport.com



- ▶ 8 injection output stages
- ▶ 8 ignition output stages
- ▶ 51 data inputs

The MS 5.0 engine control unit manages gasoline engines up to 8 cylinders. As a member of our MS 5 family, it features a powerful digital processing core with floating point arithmetic and a high-end FPGA for ultimate performance and flexibility. The MS 5 family utilizes a new software development process based on MATLAB/Simulink, which significantly speeds algorithm development by using automatic code and documentation generation. Custom functions can be quickly and easily generated. The flexible hardware design allows the MS 5.0 to support complex or unusual engine or chassis configurations.

Application

Engine layout	Max. 8 cyl., 2 bank
Control strategy	Torque structure based
Lambda control	With adaptation function
Speed limiter	
Gear cut for sequential gear box	
Map switch corresponds to 3 different target lambda and spark maps.	
Fuel cut off	
Turbo boost control	

Knock control	
Electronic throttle control	
Traction control	
Sequential fuel injection	
Asymmetric injection timing	
Asymmetric ignition timing	
Calibration interface	CCP via CAN or XCP via Ethernet
Interface to Bosch Data Logging System	
Max. Vibration	Vibration Profile 1 (see Appendix or www.bosch-motorsport.com)

Technical Specifications

Mechanical Data

Aluminum housing	
2 high pin density motorsport connectors	
132 pins, each pin individually filtered	
Vibration damped circuit boards	
Size	140 x 109 x 40.5 mm

Weight	650 g
Protection Classification	IP67 to DIN 40050, Section 9, Issue 2008
Temp. range (at internal sensors)	-20 to 85°C

Electrical Data

Approx. power cons. (w/o loads)	9 W at 14 V
Power supply	
Full operation	6.5 to 18 V
Recommended	11 to 14 V
Absolute maximum	6 to 24 V

Inputs

2 thermocouple exhaust gas temperature sensors
2 lambda interfaces (LSU 4.9)
1 crankshaft sensor (2-wire, inductive or Hall-effect)
1 camshaft sensor (2-wire, inductive or Hall-effect)
4 wheel speed sensors (inductive or Hall-effect)
32 universal analog inputs 0 to 5 V, 12 Bit
4 analog inputs (angle synchronous or time synchronous triggering up to 250 ksps, 12 Bit)
2 inputs for vibration knock sensors
1 lap trigger input

Outputs

8 injection power stages
8 ignition power stages (up to 10 A)
12 power stages (2 A; low side; PWM)
2 power stages (4 A; low side; PWM)
1 H-bridge (5 A)
2 sensor supplies 5 V/400 mA
1 time based synch-in/out

Software Tools

Modas Sport Calibration Software	Inclusive
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Environment (not included)

Programming interface MSA-Box II	F 02U V00 327-03
Data logger C 60	F 02U V00 875-03
Display DDU 8	F 02U V00 873-05

Mating Connectors (not included)

Mating Connector blue AS 6-18-35 SB	F 02U 000 474-01
Mating Connector red AS 6-18-35 SN	F 02U 000 472-01

Installation Notes

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 x 100 Mbps Ethernet interfaces

2 x 1 Mbps CAN interfaces

Ordering Information

Engine Control Unit MS 5.0
Order number **F 02U V00 326-03**

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