

ECU MS 5.0

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. It 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	up to 8 cylinders, 2 bank
Control strategy	torque-structure based
Lambda control	with adaptation function
Speed limiter	✓
Gear cut for sequential gear box	✓
Map switch (3 steps)	✓
Fuel cut off	✓
Turbo boost control	✓
Knock control	✓
Electronic throttle control	✓
Traction control	✓
Injection timing	✓
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)

Mechanical Data	
Dust and waterproof aluminium 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
Temp. range (at internal sensors)	-20 ... 85 °C

Connectors	
Mating connector I	
AS 6-18-35 SB	F 02U 000 474-01
Mating connector II	
AS 6-18-35 SN	F 02U 000 472-01

Software	
Modas Sport Calibration Software	inclusive
WinDarab Analysis Software	on request

Electrical Data

Approx. power cons. (w/o loads) 9 W at 14 V

Power Supply

Full operation 6.5 ... 18 V

Recommended 11 ... 14 V

Absolute maximum 6 ... 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 ... 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 laptrigger 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

6 diagnostic outputs with selectable internal signals

1 timebase synch-in/out

Communication interfaces

2 x 100 Mbps Ethernet interfaces

2 x 1 Mbps CAN interfaces

Application Hints

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

Part Number

MS 5.0

F 02U V00 326-03