ECU MS 5.5

The MS 5.5 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 5.5 to support complex or unusual engine or chassis configurations. The MS 5.5 has an internal 2 GB logger, presenting a cost efficient and weight optimized all-in-one solution.

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	✓
Sequential fuel injection	✓
Asymmetric injection/ignition timing	optional
Calibration interface	CCP via CAN or XCP via Ethernet
Interface to Bosch Data Logging System	
Internal logger	2 GB
Max. Vibration (see Appendix or www.bosch-motorsport.com)	Vibration Profile 1

Mechanical Data	
Aluminium housing	
3 high pin density motorsport connectors	
165 pins, each pin individually filtered	
Vibration suppression via multipoint fixed circuit boards	
Size	180 x 155 x 40 mm
Weight (approx.)	1,270 g
Temp. range (at internal sensors)	-20 ... 85 °C

Connectors	
Mating connector I AS 6-16-35 SA	F 02U 000 467-01
Mating connector II AS 6-16-35 SB	F 02U 000 468-01
Mating connector III AS 6-16-35 SN	F 02U 000 466-01

Software	
Modas Sport Calibration Software	inclusive
WinDarab Analysis Software	on request

Electrical Data	
Approx. power cons. (w/o loads)	13 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)	
2 turbo speed sensors (2-wire, inductive or Hall-effect)	
4 wheel speed sensors (inductive or Hall-effect)	
38 universal analog inputs 0 ... 5 V; 12 Bit	
4 analog inputs (angle synchronous or time synchronous triggering up to 250 ksps, 12 Bit)	
4 inputs for vibration knock sensors	
1 laptrigger input	
Outputs	
8 injection power stages	
8 ignition power stages (up to 20 A)	
20 power stages (2 A; low side; PWM)	
4 power stages (4 A; low side; PWM)	
2 H-bridges (5 A)	
3 sensor supplies 5 V/400 mA and 1x 10 V/200 mA	
1 protected Ubat output 1A	
6 diagnostic outputs with selectable internal signals	
1 timebase synch-in/out	
Communication interfaces	
2 x 100 Mbps Ethernet interfaces	
1 x RS232 serial interface	
3 x 1 Mbps CAN interfaces	

Application Hints
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.

Part Number	
MS 5.5	**F 02U V00 285-01**