

## ECU MS 4.4 Sport

The MS 4.4 Sport [1] is an engine management system for engines with up to 10 cylinders. The robust housing is provided with motorsport connectors. The system contains 10 ignition drivers for external power stages and 10 independent injection power stages. Four vibration sensor inputs allow knock detection and knock control. Two independent wide range lambda circuits allow lambda closed loop engine control. There is also a version for Turbo engines [2] available. The high number of analog channels allows for the logging of numerous engine and chassis parameters. Additionally the MS 4.4 Sport has 20 configurable pull-ups.



Application	
Engine layout	up to 10 cylinders, 2 bank
Control strategy	alpha/n
Lambda control	dual
Speed limiter	✓
Gear cut for sequential gear box	✓
Map switch (3 positions - each corresponds to different target lambda and spark maps)	✓
Fuel cut off	✓
Asymmetric injection timing	✓
Asymmetric ignition timing	✓
Turbo boost control	✓ [2]
Advanced turbo boost control	optional [2]
Knock control	optional
Electronic throttle control	optional
Traction control	optional
Variable valve timing	optional
Shift down (Blipper)	optional
Interface to Bosch Motorsport ABS M4 kit	✓
Support of 60-2 and 36-2 ignition trigger wheels (10-cylinders only 60-2!)	
Max. vibration	Vibration Profile 1 (see Appendix or <a href="http://www.bosch-motorsport.com">www.bosch-motorsport.com</a> )

Mechanical Data	
Aluminium housing	
3 high pin density motorsport connectors	
165 pins, each pin individually filtered	
Vibration damped circuit boards	
Size	174 x 133 x 39 (23) mm
Weight	860 g
Temperature range	-40 ... 75 °C

Connectors	
Mating connector I	
AS 6-16-35 SA	F 02U 000 467-01
Mating connector II	
AS 6-16-35 SC	F 02U 000 469-01
Mating connector III	
AS 6-16-35-SB	F 02U 000 468-01

Software	
Modas Sport Calibration Software	inclusive
WinDarab Analysis Software	on request

Electrical Data	
Max. power consumption	20 W at 14 V
Inputs	
2 lambda sensor interfaces LSU	
4 inputs for Hall-effect wheel speed sensors	
1 input for inductive crankshaft sensor	
4 inputs for Hall-effect camshaft sensors	
39 inputs 0 ... 5 V (20 with configurable pullups)	
4 knock sensor inputs	
8 digital inputs	
Outputs	
10 injection power stages (2.2 A)	
10 ignition drivers for external power stages	
21 power stages (2.7 A/0.6 A; low side)	
2 power stages for lambda heater	
1 H-bridge (7 A)	
3 sensor supply	5 V/600 mA
Communication interfaces	
1 K-line serial interface	
2 CAN interfaces for external communication	

Optional Accessories	
MSA-Box II	
Data logger C Sport	
Data logger C 40/C 40 Plus	
Display DDU Sport (incl. Logger)	
Display DDU 4	
Display DDU 6	

Optional Functionality	
Knock Control SW upgrade	F 01T A20 053-01
Electronic Throttle Control SW upgrade	F 01T A20 051-01
El. throttle control incl. Blipper SW upgrade, also compatible to MEGA-Line gear box control	F 02U V00 780-01
Traction Control SW upgrade	F 01T A20 052-01
Variable Valve Timing VVT SW upgrade	F 02U V00 395-01
Advanced Turbo Boost Control	F 02U V00 781-01

Part Number	
MS 4.4 Sport [1]	<b>F 01T A20 068-01</b>
MS 4.4 Sport Turbo [2]	<b>F 01T A20 074-01</b>