

## ECU MS 4 Sport

The MS 4 Sport is an engine management system for high performance engines up to 8 cylinders. The system contains 8 ignition drivers for external power stages and 8 independent injection power stages. Two independent wide range lambda circuits allow lambda closed loop engine control. There is also a version for Turbo engines, Turbo GDI engines as well as for motorcycle engines available. Various engine parameters can be measured with different input channels and transferred via CAN interface to an optional data logger.



### Mechanical Data

Sheet-metal housing	
Each connector pin individually filtered	
Vibration damped circuit boards	
Size	180 x 162 x 46 mm
Weight	430 g
Temperature range	-40 ... 75 °C

### Connectors

Mating connector I	D 261 205 344
Mating connector II	D 261 205 345

### Software

Modas Sport Calibration Software	inclusive
WinDarab Analysis Software	on request

### 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	
Injection power stage HPI 5	
HP fuel pump HDP 5	

### Electrical Data

Max. power consumption	30 W at 14 V
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#### Inputs

2 lambda sensor interfaces LSU
4 inputs for Hall-effect wheel speed sensors
1 input for inductive crankshaft sensor
1 input for Hall-effect camshaft sensor
18 analog inputs 0 ... 5 V
2 knock sensor inputs
7 digital inputs

#### Outputs

8 injection power stages	
8 ignition drivers	
20 power stages (2.7 A/0.6 A; low side; PWM)	
2 power stages for lambda heater	
1 H-bridge (5 A)	
2 sensor supply	5 V/100 mA

#### Communication interfaces

1 K-line serial interface
2 CAN interfaces for external communication

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

Part Number	
MS 4 Sport	<b>F 01T A20 049-01</b>
MS 4 Sport Turbo	<b>F 01T A20 060-01</b>
MS 4 Sport Turbo GDI	<b>F 01T A20 060-02</b>
only in combination with Bosch Motorsport HPI 5	
MS 4 Sport Motorcycle	<b>F 02U V00 024-01</b>

MS 4 Sport Feature List				
	MS 4 Sport	MS 4 Sport Turbo	MS 4 Sport Turbo GDI	MS 4 Sport Motorcycle
Engine layout	up to 8 cylinders, 2 bank	up to 8 cylinders, 2 bank	up to 6 cylinders, 2 bank	up to 4 cylinders, 2 bank
Support of Gasoline Direct Injection	-	-	+	-
Interface to Bosch Motorsport ABS M4 kit	+	+	+	-
Turbo boost control	-	+	+	-
Advanced Turbo boost control	-	optional	optional	-
Knock control	optional	optional	optional	-
Electronic throttle control	optional	optional	optional	-
Traction control	optional	optional	optional	-
Variable valve timing	optional	optional	optional	-
Shift down (Blipper)	optional	optional	optional	-
Control strategy	alpha/n	alpha/n	alpha/n	alpha/n
Lambda control	dual	dual	dual	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	+	+	+	+