

# Engine Control Unit MS 4 Sport

www.bosch-motorsport.com



- ▶ 8 injection output stages
- ▶ 8 ignition drivers
- ▶ 35 data inputs

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 wide range lambda circuits allow lambda closed loop engine control. There are also versions for Turbo and GDI engines as well as for Turbo GDI engines available. Various engine parameters can be measured with different input channels and transferred via CAN interface to an optional data logger.

## Application

Control strategy	Alpha/n
Lambda control	Dual
Speed limiter	
Gear cut for sequential gear box	
Map switch corresponds to 3 different target lambda and spark maps.	
Fuel cut off	
Asymmetric injection timing	
Asymmetric ignition timing	
Ignition trigger wheels	Support of 60-2 and 36-2
Max. vibration	Vibration Profile 3 (see Appendix or www.bosch-motorsport.com)

## Technical Specifications

### 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 to 75°C

### Electrical Data

Max. power consumption	30 W at 14 V
Power supply	
Full operation	10 to 18 V
Recommended	11 to 14 V

### Inputs

2 lambda interfaces LSU	
4 inputs for Hall-effect wheel speed sensors	
1 input for inductive crankshaft sensor	
1 input for Hall-effect camshaft sensor	

25 universal inputs 0 to 5 V

2 knock sensor inputs

### Outputs

8 injection power stages

8 ignition drivers

10 power stages (0.6 A/2.2 A/2.7 A; low side; PWM)

2 power stages for lambda heater

1 H-bridge (5 A)

2 sensor supplies 5 V/100 mA

### Software Tools

Modas Sport Calibration Software Inclusive

WinDarab Analysis Software On request

### 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

Electronic throttle control incl. shift down (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

### Environment (not included)

Programming interface MSA-Box II F 02U V00 327-03

Data logger C 50 F 02U V01 164-04

Display DDU 7 F 02U V01 130-04

Injection power stage unit HPI 5 F 02U V00 929-01

HP fuel pump HDP 5 Diff. variations available

### Mating Connectors (not included)

Mating Connector I D 261 205 344-01

Mating Connector II D 261 205 345-01

### 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

1 K-line serial interface

2 CAN interfaces for external communication

### Ordering Information

#### Engine Control Unit MS 4 Sport

Order number **F 01T A20 049-02**

#### Engine Control Unit MS 4 Sport GDI

Only in combination with HPI 5

Order number **F 02U V01 138-01**

#### Engine Control Unit MS 4 Sport Turbo

Order number **F 01T A20 060-01**

#### Engine Control Unit MS 4 Sport Turbo GDI

Only in combination with HPI 5

Order number **F 02U V01 000-01**

#### Engine Control Unit MS 4 Sport Motorcycle

Order number **F 02U V00 024-01**

### Software Options

#### SW Upgrade Traction Control

Order number **F 01T A20 052-01**

#### SW Upgrade Knock Control

Order number **F 01T A20 053-01**

#### SW Upgrade E-Gas

Order number **F 01T A20 051-01**

#### SW Upgrade Advanced Turbo Control

Order number **F 02U V00 781-01**

#### SW Upgrade Variable Valve Timing






Order number **F 02U V00 395-01**

#### SW Upgrade ETC & Blipper

Compatible to MEGA-Line gear box control

Order number **F 02U V00 780-01**

**MS 4 Sport Variations**

Type	Engine Control Unit MS 4 Sport	Engine Control Unit MS 4 Sport GDI	Engine Control Unit MS 4 Sport Turbo	Engine Control Unit MS 4 Sport Turbo GDI	Engine Control Unit MS 4 Sport Motorcycle
					
Max. Cyl./bank	8/2	6/2	8/2	6/2	4/2
GDI support	-	+	-	+	-
ABS M4 interface	+	+	+	+	-
Turbo boost ctrl	-	-	+	+	-
Advanced turbo boost ctrl	-	-	Opt.	Opt.	Opt.
Knock ctrl	Opt.	Opt.	Opt.	Opt.	-
El. Throttle ctrl	Opt.	Opt.	Opt.	Opt.	-
El. Throttle ctrl incl. shift down (Blipper)	Opt.	Opt.	Opt.	Opt.	-
Traction ctrl	Opt.	Opt.	Opt.	Opt.	-
Var. valve timing	Opt.	Opt.	Opt.	Opt.	-

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