

Bosch Motorsport
ABS M4 Kit
Product Information



BOSCH

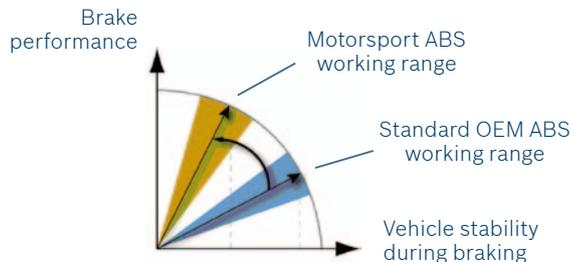
Invented for life



ABS in Motorsports

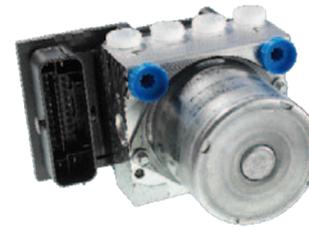
The ABS function is a compromise between drivability and brake effectiveness. Drivability is the primary focus for passenger based vehicles. The ABS is designed to keep the passenger vehicle maneuverable and stable under any circumstances and under any conceivable driving conditions.

In a motorsports context, this compromise shifts towards brake effectiveness, as experienced drivers can still control a slightly unstable vehicle.



Included in the kit

The hydraulic unit with attached ECU and the sensors are based on series production components.



Hydraulic unit with attached ECU



Four wheel speed sensors DF11

Features of the ABS M4

ABS M4 is suitable for **front-wheel, rear-wheel and four-wheel drive** vehicles. It is based on a series production ABS and adapted in years of development work to meet motorsport requirements.

If, during braking, the measured wheel speed deviates from the system's predicted wheel speed, the ABS controller takes over, correcting the brake force to keep the wheel at the optimum slip level and so achieving the highest possible deceleration rate.

Nine different control settings (Pos. 1-9)

With the different control settings (maps) the driver can select the preferable map for the weather, the racetrack and his driving style.

Two additional customer-specific control maps storable (Pos. 10+11)

Two additional customer-specific control maps can be stored on position 10 and 11.

Switch off ABS functions (Pos. 12)

You can switch off the ABS functions by switching to position 12. This can be very helpful, e.g. for calibration of the brake balance adjuster. All ABS sensor signals will still be communicated. Every older ABS M4 kit can be updated to this function.

Measuring vehicle dynamics

Due to specially-adapted chassis and tires, motor racing vehicles allow for significantly higher longitudinal and lateral acceleration rates than mass-production vehicles. The ABS M4 is designed to intervene after a corresponding amount of time. Our ABS M4 sensors constantly measure vehicle acceleration and rotation rates as well as the pressure of the front brake circuit. The ABS control algorithms rely on these measurements for proper operation.

Programming and diagnosis software

Each ABS M4-Kit is preprogrammed with specific data related to the vehicle. Should the vehicle data change at any time, you can adapt the system settings by using the programming software. Find the software for free download on our homepage at www.bosch-motorsport.com/abs

Performing a system function test

The system function test can diagnose the functional capability and professional assembly of any part, without having to move the vehicle.

Reading data from the error log

Any missing part(s) or incorrectly connected electrical connections are signaled by a lit MIL (Malfunction Indication Lamp). In the error log you can read and analyze what errors have set the MIL and then delete the errors after the issue has been resolved.

Repair Bleeding Wizzard

Step-by-step instructions will guide you through bleeding the ABS unit.

Connectivity for data loggers and display

You can connect a data logger via CAN. The CAN bus can give you wheel speeds and other readings from the system. All ABS M4 CAN messages can be displayed on any programmable, CAN-compatible display.

Communication between ABS M4 and your laptop

The MSA Box II from Bosch Motorsport is the communication interface between ABS M4 and your laptop.

Reset the system with a switch in the cockpit

You can reset ABS M4 with a switch in the cockpit.

Hydraulic unit with attached ECU

Mechanical Data	
Dust and splash proof production housing	
Vibration damped circuit board	
38 pin connector	
2 hydraulic valves per wheel	
2 brake circuits (front and rear)	
2 hydraulic high pressure pumps	
2 hydraulic accumulators 3 ccm/each	
Standard fittings	2 x master cylinders M12x1 4 x brake cylinders M10x1
Size	125 x 80.3 x 129.6 mm
Weight	1,850 g
Operating temperature	-30 ... 130 °C
Max. shock	50 g < 6 ms

Electrical Data	
Supply voltage	8 ... 16 V, max. 26 V < 5 min
Max. peak voltage	35 V < 200 ms
Power consump.	8 W standby, 230 W in operation
Inputs	
4 active wheel speed DF11	
Brake pressure (front brake circuit)	
Longitudinal and lateral acceleration, yaw rate	
9 switch positions preconfigured	
2 switch positions programmable	
1 switch position for ABS function OFF	
Brake light switch	
Outputs	
ABS warning light (MIL)	
Control of internal ABS valves	
Control of pump motor	
Communication	
CAN interface	

Options

Part Numbers

Software package Traction control (ASR)

includes unlocking of software, map switch to select one of the nine preconfigured control settings, CAN module

on request

Software package Electronic Brake Force Distribution (EBD)

for racecars without brake balance adjuster

on request

Communication interface MSA-Box II

F 02U V00 209-01

Order Information

Part Numbers

ABS M4 Kit 1 (incl. wire harness with motorsport connectors, customer-specific layout, wheel speed sensors with production-type connectors)

F 02U V00 289-01

ABS M4-Kit 2 (incl. wire harness with motorsport connectors, customer-specific layout, wheel speed sensors with motorsport connectors)

F 02U V00 290-01

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