



2012 BSB SEASON SUPERBIKE CLASS ELECTRONIC REGULATIONS

Prepared by :

Alan Bell
MoTeC Europe Ltd

For attention of:

Stuart Higgs
MSVR



Race smart.

Introduction

Following the successful introduction of a control ECU for the BSB EVO championship in 2010, this document contains details of the electronic regulations for the full Superbike class in 2012.

The firmware will provide the same functionality as currently used in the BSB EVO category.

2010-2011 BSB EVO

Allowed

Engine braking (open loop, per gear).

Ignition and fuel mapping with ambient compensation and individual cylinder trims.

Full throttle gear shift cut.

Banned

Traction control.

Launch control.

Throttle blipping on down shifts.

Closed loop fuelling.

Anti-wheelie.

Anti-jerk.

Allowed Strategies : Engine Braking

Engine Braking

Stock engine braking control actuators will be supported i.e. drive by wire (if fitted to production bike), stepper motor (feedback and non-feedback types) and air bypass valve.

- ❑ Engine braking control will be gear v engine rpm. This setup allows for different levels of engine braking in the individual gears.
- ❑ Closed loop engine braking will not be allowed.
- ❑ Corner by corner engine braking will not be allowed.

For machines deemed to be at a disadvantage (in terms of stock engine braking control actuators), it will be possible to fit an aftermarket air bypass valve (such as a Bosch idle speed control valve).

Allowed Strategies : Fuel and Ignition Mapping

Stock engine and chassis sensors will be supported where possible and MoTeC will calibrate these sensors if necessary.

Fuel Mapping

- ❑ Open loop fuel delivery control with compensations for airbox pressure, airbox temperature, barometric pressure and coolant temperature.
- ❑ Individual fuel trim tables for each cylinder.

Ignition Mapping

- ❑ Ignition timing control with compensations for airbox temperature, barometric pressure and coolant temperature.
- ❑ Individual ignition trim tables for each cylinder.

Allowed Strategies : Full Throttle Gear Shifting

Gear Shift Cut

- ❑ The gear shift strategy will support switch and load cell type quickshiffters.
- ❑ Cut and recovery time is programmable for each gear.

Banned Strategies

Traction Control

All forms of traction control strategies are banned. This includes wheel speed comparison, engine speed rate of change and wheel speed rate of change.

Launch Control

Dedicated launch control strategies and dual rpm limits are banned.

Auto-blipping

Strategies allowing auto-blipping of the throttle on down-shifts (for drive by wire bikes) will not be allowed.

Closed Loop Fuelling

Closed loop fuelling strategies will not be allowed.

Anti-wheelie

Dedicated anti-wheelie strategies or using fork position for any fuel or ignition compensations is banned.

Anti-jerk

Anti-jerk strategies using engine speed rate of change is not allowed.

M170 ECU

The M170 ECU is a high specification unit which comes with 250Mb of logging memory and is currently used in the BSB EVO Championship.

The same ECU has been specified for the main BSB championship for the 2012 race season.

Teams currently using M170 ECUs in the 2011 championship can get their existing ECUs converted to 2012 BSB spec by MoTeC.



SDL3 Dash

MoTeC recommend the SDL3 dash.

Where teams have other MoTeC dashes (such as ADL, ADL2, ADL3 or SDL) these can also be used with the M170.

Teams who wish to use stock or third party dashes may do so but there will be an engineering fee to address the integration of these units with the M170 ECU.



Wiring

Wiring looms are free, so teams can source their own looms from their preferred suppliers.

A standardised ECU pin out will be supplied by MoTeC and this must be adhered to.

Support

Track Support

- ❑ MoTeC will have support engineers at all races and official tests.
- ❑ A full stock of spares is carried to every event in the UK.

Training

- ❑ MoTeC will provide full training documentation in the form of electronic manuals and tutorials.
- ❑ In addition, MoTeC will run training seminars at MoTeC Europe on specific dates (to be confirmed).
- ❑ Training will encompass 'M1 Tune' software and 'i2 Pro' data analysis software and will provide users with sufficient knowledge to operate both types of software.
- ❑ Training will be general admission (i.e. multiple teams) and will be free of charge but, if required, individual team training will be supplied at extra cost (on or off-site).

Scrutineering

Separate Logging

The M170 contains a separate section of memory which is allocated solely for the purposes of scrutineer logging. This section of logging is not accessible by race teams.

The scrutineer logging is used to check for cheating, diagnose problems and help with analysis of racing incidents.

Other

Scrutineering will also require teams to give access to third party data loggers and controllers to ensure that these are not controlling additional actuators.

Costs & Supply

Teams are liable for any hardware damage and must pay for replacement units or repair charges.

Purchase Option

- ❑ Target price is £3000 which covers initial purchase of the ECU and the dash from MoTeC Europe.
- ❑ Target price is valid until 31/12/11 after which it will rise to £3500.
- ❑ Core system accessories (lambda modules, ignition amplifiers, GPS units) are available via MoTeC dealers at normal retail price.
- ❑ Replacement SDL3s are available via MoTeC dealers at normal retail price (currently £1655).
- ❑ Replacement M170s are available direct from MoTeC Europe at normal retail price (currently £2500).

Lease Option

- ❑ The MSVR-MoTeC base package seasonal lease (ECU and dash) is £2000, £1000 of which is refundable at the end of the season, on return of the hardware.
- ❑ Core system accessories (lambda modules, ignition amplifiers, GPS units) are available via MoTeC dealers at normal retail price.
- ❑ Replacement SDL3s are available via MoTeC Europe at the discounted price of £1150.
- ❑ Replacement M170s are available direct from MoTeC Europe at the discounted price of £2150.

Support

- ❑ Cost of support will be covered in a one-off fee which will be charged to teams when they purchase or lease their ECU.
- ❑ This cost will be approximately £650 per ECU for the entire race season.