

IGNITION MODULES SINGLE AND DOUBLE APPLICATIONS



- **Types Available:**
 - **Single Channel** – Distributor (Output is 14 amps maximum)
 - **Double Channel** – Multiple coil applications (Output is 14 amps maximum)
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- **Applications:**
 - **Multi** spark ready
 - **Overdrive** coil protection
 - **Short** circuit protected on inputs, no output protection, shorting the ignition modules output will damage the module.

When used with other manufacturing ecu and it can happen that the Ignition module stop working or misfiring. Reason is most likely the charge time is too long and the **Overdrive** coil protection kicks in.



Contacting details:

Email: info@bluearc-ecu.com

Website: www.bluearc-ecu.com

Chris De Weerdt +27 82 743 1723

Maruis Heikens +27 82 956 4953

Bici Van Aswegen +27 72 394 5928

Features / description of Ecu

- **Engine Type** – 3 to 12 cylinders.
- **Trigger Inputs** – can be **hall** or **inductive**, all in one unit.
 - Distributor
 - 24 – 2 , 24 – 0 + Cam home (Honda Distributor)
 - 36 – 1, 36 – 1 + Cam home
 - 36 – 2, 36 – 2 + Cam home
 - 60 – 2, 60 – 2 + Cam home
 - 60 – 2 + 2, 60 – 2 + 2 + Cam home
- **Crank / Trigger offset** can be **adjusted** from -200° to +200°, to calibrate actual timing.
- **Inputs x 10** – 2 x fixed, 8 x reconfigurable depending on configuration.
 - 3 x Resister to Ground – Temp sensors, Fuel / Timing / Boost Trim pots...
 - 2 x 5V ADC's – TPS, AFR input, Fuel / Timing / Boost Trim pots...
 - 2 x Hall / inductive – Trigger Input & Cam Home
 - 1 x 12V ADC – Air con, Immobilizer, Activate switch...
 - 2 x Signal to Ground – Immobilizer, Activate switch...
- **Outputs x 21** – most are **reconfigurable** depending on configuration.
 - 6 x ignition outputs (Driver require)
 - 7 x injector outputs
 - 3 x relay outputs
 - 4 x idle control outputs (For now 2 is used)
 - 1 x 5V sensor supply

Reconfigurable Outputs

Fuel pump , Aux Fuel pumps , Starter Relay , Boost Ctrl , Air con Relay, Ign Relay , Nitro switching , Three-stage VTEC switching , Fan/Water pump Relays... The outputs are control with a list of combinations of options / ranges of: RPMs, Loads, Temperatures, and Battery Voltages. With the option of **Add** fuel and timing.

- **Injector Options** – **trimming** per cylinder (cam home **required**)
 - **Full Sequential**. Depending on **number** of cylinders.
 - **Semi-Sequential**. Depending on **number** of cylinders.
 - **Full Sequential** plus **Auxiliary** injections. Depending on **number** of cylinders.
 - **Semi-Sequential** plus **Auxiliary** injections. Depending on **number** of cylinders.
 - **Batch Fire** – ignition divided by 2, for every second ignition event all injectors are fired at once.
- **Ignition Options** – **trimming** per cylinder (cam home **required**)
 - **Single** coil
 - **Wasted** spark
 - **Multi coil per cylinder** – Each coil fires individually - cam home is needed if not, will run in wasted spark mode.
- **Multi Spark** – can fire up to 11 times per ignition event. Number of extra sparks are decreased as RPM increases automatically (prevent over laps).

- **Start Delay Spark** – to prevent backfires on ignition, on high compression. Engines to achieve more inertia before ignitions are fired.

Multiple Rev Limiters

Methods:

- **Cut spark** , **Cut fuel** , **Cut fuel and spark**

Rev Limiters Types:

- **Main Rev Limiter** – Changes map scaling but does not influence the maps
- **Cold Rev Limiter** – prevents over revving on cold engines
- **Over Boost Limiter** – For engine protection and also changes map scaling but not the increments of the maps
- **Auxiliary Rev Limiter (Launch control)** – Cut **spark** or cut **fuel** or both. Enrichment and timing retard on request.
- **Auxiliary Rev Limiter (Semi-launch control)** – Minimize wheel **spin**. Boost on gear shifting (anti turbo lag).
- **Engine Cut** on **Hot** Water Temperature.

Compensation Maps – Individual maps for adding **fuel** and **timing** on :

- Battery voltage
- Water temp
- Air Temp
- Aux Temp
- Altitude – **Build in** Barometric pressure sensor.

Electronic Boost Controller – (Standard **4 Bar** map sensor – 3 Bar maximum boost) Optional **Trim pot** if configured for adjustable boost level.

Boost Control Options

- **Disable Boost Control** after RPM – Functions to go back to gate pressure after specific RPM has been reached
- **Turbo timer** – Protects turbo, time based, temp and or time based

Idle Control – 6% to 80% duty cycle per RPM range as well as frequency 4 – 200 Hertz per RPM range

Dual Fuel Mapping – Run 2 types of **fuels** on different maps with separate injectors at the same time. Optional fuel **Trim pot** if configured.

- **MAP** based
- **TPS** based
- **MAP & TPS** based – (**Wild** camshaft with **High** compression engines) On low RPM there are no **Vacuum** and engine too **Rich**. To overcome this problem you can take fuel away on TPS fuel Map.

Timing Map – Optional timing **Trim pot** if configured.

- **MAP** based
- **TPS** based

Data Logging – Can be used for fault finding and analytical data

Cranking – Add **fuel** on Cold and normal temperature.

Options – with safety activation input is also available

- Push button Starting
- Push pedal Starting

Software Update – Software **Update** is done via **USB** cable.