IGN4 IGNITION MODULE - 4 CHANNEL

The IGN4 Ignition Module - 4 Channel is a high current ignition coil driver for use with most inductive ignition coils.

This device does not incorporate dwell control, current limiting or current sensing, so should only be used in systems which offer precise dwell control using multi-tooth crankshaft reference sensors.

⇨   When using the IGN4, dwell tables for existing ignition modules (for example Bosch BIM-series) are not appropriate. The IGN4 should only be used with coils and data provided by MoTeC. Contact MoTeC with specific coil and engine data before choosing this device for an application.

⚠   **CAUTION:** the IGN4 module must only be used in applications approved by MoTeC. Incorrect use may cause serious damage to the coils and IGN4 unit.

▶ FEATURES

- Four independent 20 ampere circuits with common ground
- Very fast, 12 μs switching time
- Fully sealed case suitable for under bonnet mounting

▶ COMPATIBILITY

MoTeC ECU Models

- M1 Series (package dependant).

▶ APPLICATIONS

- Coil-on-Plug coils (e.g. Denso 129700-4410, 129700-3960, 129700-5150, 129700 -3881)
- Coils with primary resistance > 1 Ohm

▶ SPECIFICATIONS

### Electrical

4 identical channels, each with:

- Output current:
    - Continuous at 50 °C (case temp) - 20 A
    - Pulsed - 40 A
- Switching time - 12 μs
- Input threshold:
    - minimum 1.0 V
    - maximum 2.4 V
- Input impedance - 15 kΩ to ground
- Primary side clamping voltage 410 V
- Maximum stored coil energy at peak current 700 mJ

Physical

- Size: 38.0 x 31.4 x 14.0 mm
- Weight: approx 60 g plus connectors
- Connectors:
    - Input: 4 pin DTM male
    - Output: 6 pin DTM male
- Maximum case temperature 125 °C

DIMENSIONS AND MOUNTING

It is preferable to mount the IGN4 to a metal heat sinking surface; for example an engine bulkhead.
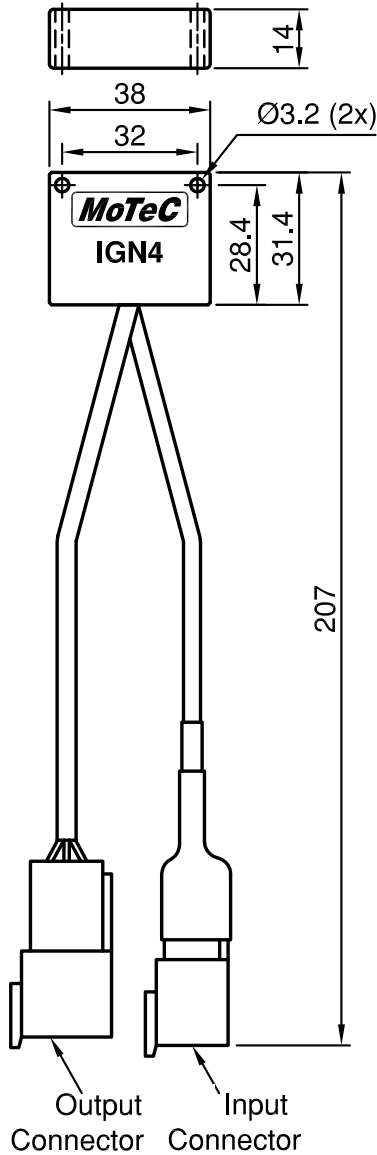
CONNECTOR PINOUTS

Connector 1 – Input

4 pin DTM connector.

Mating connector #68054

Pin	Name	Function
1	IGN1	Ignition 1 input signal from ECU
2	IGN2	Ignition 2 input signal from ECU
3	IGN3	Ignition 3 input signal from ECU
4	IGN4	Ignition 4 input signal from ECU

Connector 2 – Output

6 pin DTM connector.

Mating connector #68056

Pin	Name	Function
1	COIL 1	Ignition coil number 1 output
2	COIL 2	Ignition coil number 2 output
3	COIL 3	Ignition coil number 3 output
4	COIL 4	Ignition coil number 4 output
5	GND	Ground
6	GND	Ground

CONFIGURATION

This procedure describes the configuration for the GPR package using M1 Tune.

On the Initial Setup Ignition Configuration worksheet:

Parameter	Value
Ignition Driver Firing Edge	Falling Edge
Ignition Driver Delay	12 μS
Ignition Driver Current	40 mA
Ignition Charge Time	Ignition Coil Specific

IGN4 TRUTH TABLE

Input	Output4
Low	Unswitched (high impedance)
High	Switched to ground

▶ WIRING

Refer to the relevant M1 datasheet for the default ECU pinout.

⇨   The M1 designation is IGN_LS (Low Side Ignition).

   In addition to the information here; from the Help menu in M1 Tune, see the Firmware Wiring help for the ECU Pin List.

IGN4 Connector 1			IGN4 Connector 2					
IGN4 Pin	IGN4 Name	M1 ECU Name	IGN4 Pin	IGN4 Name	M1 ECU Name	Coil	Coil Pin	Coil Name
1_1	IGN1	IGN_LS1	2_1	COIL1	—	# 1	+	Coil +
1_2	IGN2	IGN_LS2	2_2	COIL1	—	# 2	+	Coil +
1_3	IGN3	IGN_LS3	2_3	COIL1	—	# 3	+	Coil +
1_4	IGN4	IGN_LS4	2_4	COIL1	—	# 4	+	Coil +
			2_5	GND	BAT_NEG	—	—	—
			2_6	GND	BAT_NEG	—	—	—

Wiring Schematic