# Ignition Coil P65-WS



- Max. 35 kV
- Min. 65 mJ
- Connection for high voltage wire according to SAE (American standard)
- Max. 10,000 1/min
- Developed for GDI engines

This single fire coil is a low cost concept, designed to get connected to the spark plug via a high voltage wire. The high voltage connector is specified according to the SAE standard.
The performance of the coil fulfills the demands of modern GDI engines.
The main benefits of this product are the high packaging flexibility and its high electrical performance at low costs.

## Application

| | |
|---|---|
| Spark energy | ≥ 65 mJ |
| Primary current | ≤ 7.5 A |
| Operating temperature range at outer core | -20 to 140°C |
| Storage temperature range | -40 to 100°C |
| Max. vibration | ≤ 250 m/s$^2$ at 5 to 2,500 Hz |

## Technical Specifications

### Mechanical Data

| | |
|---|---|
| Length | See offer drawing |
| Weight w/o wire | < 222 g |
| Mounting | Screw fastening |

### Electrical Data

| | |
|---|---|
| Primary resistance | 570 mOhm |
| Secondary resistance | Incapable of measurement |
| High voltage rise time | ≤ 1.9 kV/µs |
| Max. high voltage at 1 MOhm \|\| 10 pF | ≤ 35 kV |
| Spark current | ≤ 74 mA |
| Spark duration at 1 kV \|\| 1 MOhm | ≤ 2.0 ms |
| Noise suppression | Inductive and 1 kOhm resistance |
| Suppression diode / EFU | Integrated |

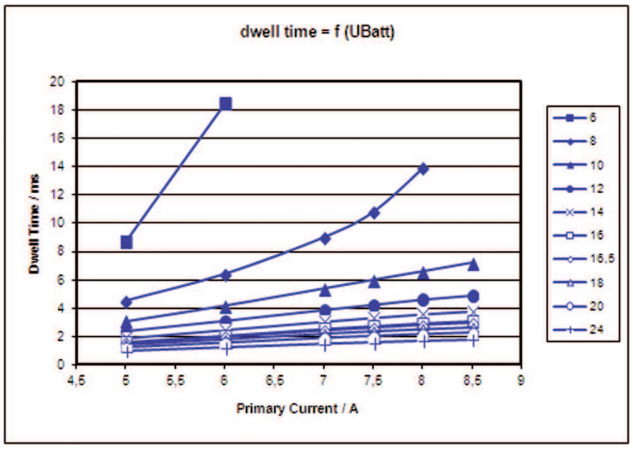
### Characteristic

| | |
|---|---|
| Measured with power stage | IGBT IRG4BC40S ($U_{ce}$=600 V) |

### Connectors and Wires

| | |
|---|---|
| Connector | Tyco AMP |
| Mating connector | D261.205.350-01 |
| Pin 1 | Engine GND |
| Pin 2 | $U_{batt}$ |
| Pin 3 | ECU ignition power stage |

### Characteristic dwell times [ms]



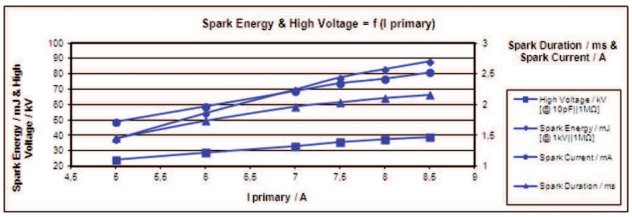

*Dwell time*

| $U_{batt}$ | I primary | | | | | |
|---|---|---|---|---|---|---|
| | 5.0 A | 6.0 A | 7.0 A | 7.5 A | 8.0 A | 8.5 A |

| | | | | | | |
|---|---|---|---|---|---|---|
| **6 V** | 8.74 | 18.5 | | | | |
| **8 V** | 4.5 | 6.4 | 9 | 10.8 | 13.9 | |
| **10 V** | 3.1 | 4.2 | 5.4 | 6 | 6.6 | 7.2 |
| **12 V** | 2.36 | 3.1 | 3.88 | 4.25 | 4.63 | 4.92 |
| **14 V** | 1.9 | 2.48 | 3.05 | 3.32 | 3.57 | 3.77 |
| **16 V** | 1.61 | 2.06 | 2.53 | 2.73 | 2.93 | 3.08 |
| **18 V** | 1.55 | 2 | 2.43 | 2.62 | 2.81 | 2.95 |
| **20 V** | 1.39 | 1.77 | 2.16 | 2.33 | 2.48 | 2.6 |
| **22 V** | 1.22 | 1.54 | 1.88 | 2.02 | 2.15 | 2.26 |
| **24 V** | 0.97 | 1.23 | 1.49 | 1.6 | 1.71 | 1.78 |

Measured values are without loom resistance. Loom resistance must be less than the primary resistance. The needed dwell time is to be verified through current measurement

### Spark energy and provided high voltage




*Spark energy*

| I prim. | Spark energy | -duration | -current | Hi voltage |
|---|---|---|---|---|
| 5 A | 37.8 mJ | 1.46 ms | 49 mA | 24.3 kV |
| 6 A | 54.5 mJ | 1,74 ms | 59 mA | 28.9 kV |
| 7 A | 69.8 mJ | 1.97 ms | 69 mA | 33.2 kV |
| 7.5 A | 77.6 mJ | 2.04 ms | 74 mA | 35.8 kV |
| 8 A | 83.0 mJ | 2.11 ms | 77 mA | 37.7 kV |
| 8.5 A | 88.0 mJ | 2.16 ms | 81 mA | 39.0 kV |

## Installation Notes

During mounting of the spark plug please pay attention that full clamping and proper contacts are made to ensure safe connection between coil and spark plug.

The coil P65 has no integrated transistor and requires an ECU with internal ignition power stages, e.g. IGBT IRG4BC40S or BIP.

For technical reasons the values of the coils may vary.

Please regard the specified limit values.

Please find further application hints in the offer drawing at our homepage.

In case of ignition-caused malfunctions, please use screened sensor wires.

### Design Note

We strongly recommend the design of the spark plug shaft has to ensure that there are no sharp edges in the shaft geometry due to design or machining. Only in compliance with this recommendation, a proper function can be ensured.

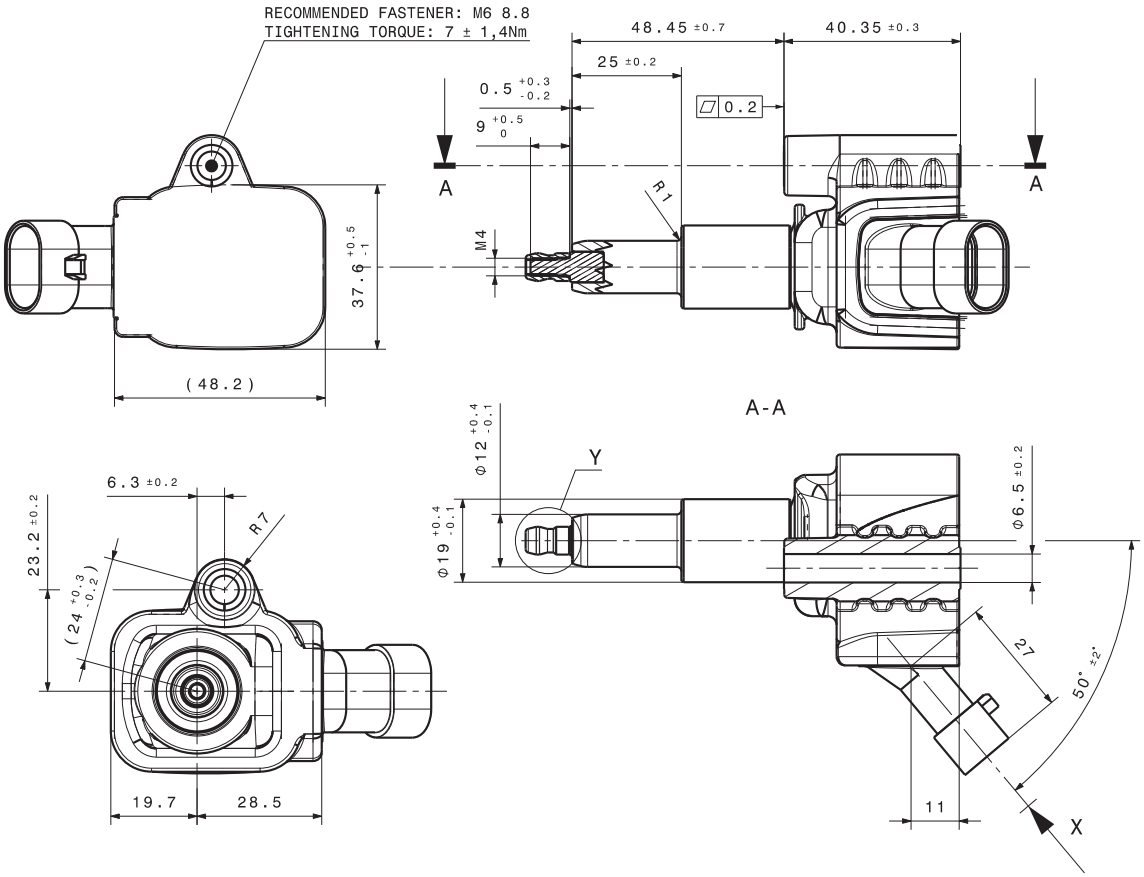
## Legal Restrictions

Generally blocked are direct and indirect business involving high risk destinations, including Russia, Belarus, Cuba, Iran, North Korea, Syria, Libya, Afghanistan, and certain non-governmental controlled Ukrainian regions. This list may change as geopolitics evolve.

## Ordering Information

**Ignition Coil P65-WS**
Order number **F02U.V01.926-01**

## Dimensions




*See Offer Drawing for further information*

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