

Ignition Coil P50-M



- ▶ Max. 35 kV
- ▶ Min. 50 mJ
- ▶ Max. 3.0 kV/μs
- ▶ Max. 10,000 1/min
- ▶ High voltage contacting via high voltage wire and spark plug connector possible

The single fire coil P50 is a low cost concept designed for direct mounting to the cylinder head. A high voltage ignition wire can optionally be connected to the secondary output terminal. The coil P50 requires an ECU with internal ignition power stages for each single fire coil. The coil P50-M is specifically for motorsport applications. This coil is operable in higher vibration environments.

Application

Spark energy	≥ 50 mJ
Primary current	≤ 8.5 A
Operating temperature range at outer core	-20 to 140°C
Storage temperature range	-40 to 100°C
Max. vibration	≤ 800 m/s ² at 5 to 2,000 Hz

Technical Specifications

Mechanical Data

Weight	265 g
Mounting	Pluggable
Spark plug connector	+

Electrical Data

Primary resistance with wire	370 mOhm
Secondary resistance	Incapable of measurement
High voltage rise time	≤ 3.0 kV/μs
Max. high voltage at 1 MOhm 10 pF	≤ 35 kV
Spark current	≤ 92 mA

Spark duration at 1 kV 1 MOhm	≤ 1.15 ms
Noise suppression	With spark plug connector
Suppression diode / EFU	Integrated

Characteristic

Measured with power stage	IGBT IRG4BC40S (U _{ce} =600 V)
---------------------------	---

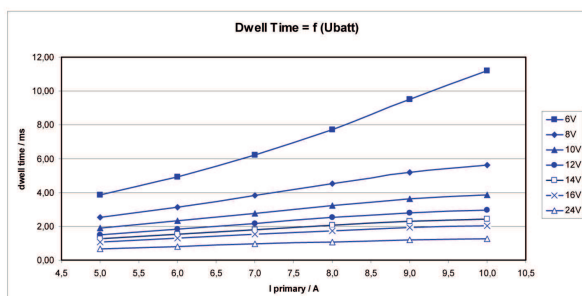
Connectors and Wires

Connector	Bosch Compact
Mating connector 3-pole Compact	D261.205.335-01
Pin 1	ECU ignition power stage
Pin 2	Engine GND
Pin 3	U _{batt}
Various motorsport and automotive connectors are available on request.	
For spark plugs	Ceramic diameter d=10 mm

Characteristic dwell times [ms]

U _{batt}	I _{primary}					
	5.0 A	6.0 A	7.0 A	8.0 A	9.0 A	10 A
6V	3.84	4.93	6.2	7.7	9.5	11.2
8V	2.54	3.14	3.81	4.51	5.17	5.61
10V	1.9	2.33	2.76	3.21	3.62	3.87
12V	1.51	1.84	2.17	2.51	2.8	2.97
14V	1.26	1.52	1.79	2.06	2.29	2.42
16V	1.07	1.3	1.53	1.74	1.93	2.04
18V	0.94	1.13	1.32	1.51	1.67	1.77
24V	0.68	0.81	0.95	1.08	1.19	1.26
30V	0.53	0.63	0.74	0.84	0.93	0.98

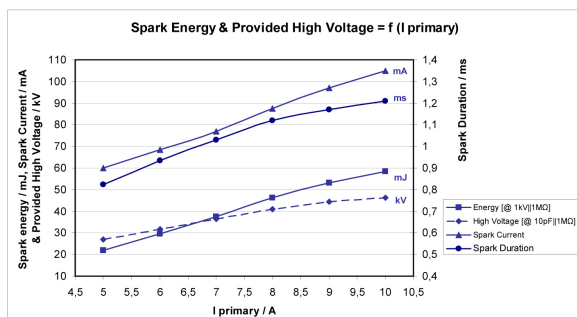
Measured values are without loom resistance. Loom resistance must be less than the primary resistance. The needed dwell time is to be verified through current measurement



Dwell time

Spark energy and provided high voltage

I prim.	Spark energy	-duration	-current	Hi voltage
5 A	22 mJ	0.82 ms	60 mA	26.8 kV
6 A	29.7 mJ	0.93 ms	68.5 mA	31.6 kV
7 A	37.5 mJ	1.03 ms	77 mA	36.4 kV
8 A	46.3 mJ	1.12 ms	87.5 mA	40.9 kV
9 A	53 mJ	1.17 ms	97 mA	44.4 kV
10 A	58.4 mJ	1.21 ms	105 mA	46.3 kV



Spark energy

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 P50 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.

Usage above I_{prim} > 8.5 A or 35 kV may reduce the lifetime.

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.

Ordering Information

Ignition Coil P50-M

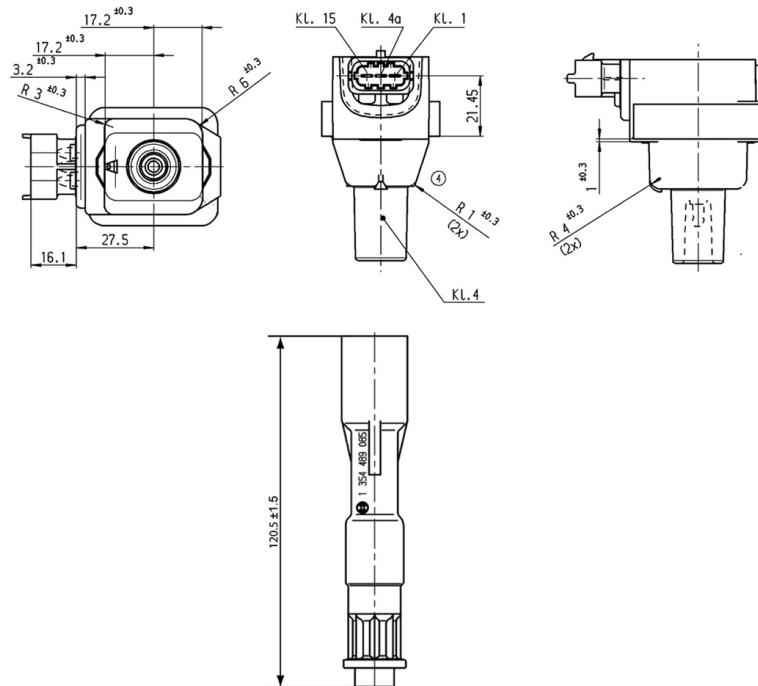
Order number **F02U.V00.869-01**

Accessories

Accessory spark plug connector

Order number **1354.489.085**

Dimensions



See Offer Drawing for further information

Represented by:

Europe:
Bosch Engineering GmbH
Motorsport
Robert-Bosch-Allee 1
74232 Abstatt
Germany
motorsport@bosch.com
www.bosch-motorsport.de

North America:
Bosch Engineering North America
Motorsport
38000 Hills Tech Drive
Farmington Hills, MI 48331-3417
United States of America
motorsport@bosch.com
www.bosch-motorsport.com

Asia-Pacific:
Bosch Engineering Japan K.K.
Motorsports Department
1-9-32 Nakagawachuo, Tsuzuki-ku
Yokohama-shi
Kanagawa, 224-8601
Japan
motorsport@jp.bosch.com
www.bosch-motorsport.jp

Australia, New Zealand and South Africa:
Robert Bosch Pty. Ltd
Motorsport
1555 Centre Road
Clayton, Victoria, 3168
Australia
motor.sport@au.bosch.com
www.bosch-motorsport.com.au