

Ignition Coil P50/P50-M

www.bosch-motorsport.com



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

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	Please see Variations

Technical Specifications

Variations

	P50	P50-M
Max. vibration	≤ 400 m/s ² at 5 to 2,000 Hz	≤ 800 m/s ² at 5 to 2,000 Hz
Weight	223 g	265 g
Spark plug connector	-	+

Mechanical Data

Weight	Please see Variations
Mounting	Pluggable

Electrical Data

Primary resistance with wire	370 mΩ
Secondary resistance	Incapable of measurement
High voltage rise time	≤ 3.0 kV/μs
Max. high voltage at 1 MΩ 10 pF	≤ 35 kV
Spark current	≤ 92 mA
Spark duration at 1 kV 1 MΩ	≤ 1.15 ms

Noise suppression	With spark plug connector
Suppression diode / EFU	Integrated

Characteristic

Measured with power stage	IGBT IRG4BC40S ($U_{ce}=600\text{ V}$)
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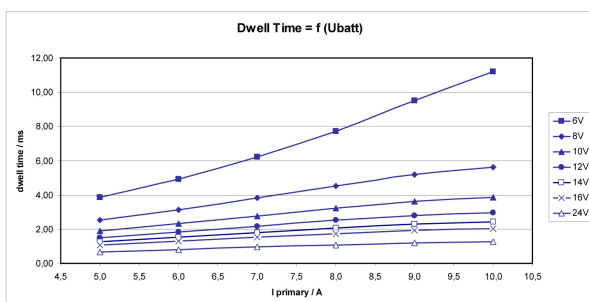
Connectors and Wires

Connector	Bosch Compact
Mating connector 3-pole Compact	D 261 205 335-01
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 $d=10\text{ mm}$

Characteristic dwell times [ms]

U_{batt}	$I_{primary}$					
	5.0A	6.0A	7.0A	8.0A	9.0A	10A
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

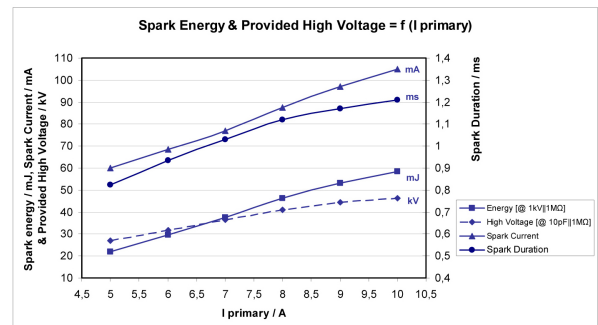
Measured values are without loom resistance. Loom resistance must be less than the primary resistance. The needed dwell time is to be verified through current measurement



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.

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

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

Ordering Information

Ignition Coil P50

Order number **0 221 504 001**

Ignition Coil P50-M

Motorsport version

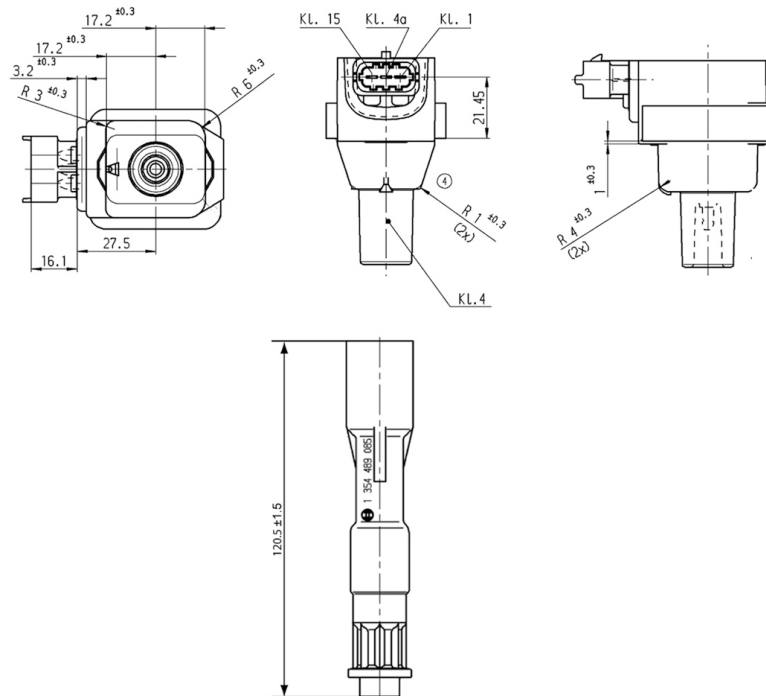
Order number **F 02U V00 869-01**

Accessories

Accessory spark plug connector

Order number **1 354 489 085**

Dimensions



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