

IPC-400

Test control system for common-rail systems

OVERVIEW OF INJECTOR PUMP CONTROL (IPC)

The operation of common-rail systems under test conditions takes high demands to measuring and testing technology regarding the reproducibility and reliability. The IPC product family from Bosch Engineering GmbH was specially designed for development, endurance testing and quality assurance.

Due to different fields of applications it is possible that the IPC runs with single components of common-rail systems, such as high-pressure pumps, as well as entire common-rail systems including injectors and actuators of the high-pressure control circuit. IPC test control units are modular build of a control unit and power stage unit, and therefore enable adaption to the respective test requirements. The wiring harness included in the scope of delivery connects the sensors and actuators of the common-rail system with the test control unit. The scope of delivery also includes PC software that serves as a graphic configuration and operation interface. Communication with the test control unit takes place via a USB connection or CAN interface.

Functions

- ▶ Drive and control of complete common-rail systems, including rail pressure control
- ▶ Modular system design; scalable number of solenoid power stages
- ▶ Parallel operation of six solenoid power stages; freely configurable
- ▶ Integrated diagnostics functionality
- ▶ Overvoltage protection and overcurrent shutdown
- ▶ 8 – 28 V operation
- ▶ User-friendly calibration software
- ▶ Integrated measurement data acquisition
- ▶ CAN interface for remote operation
- ▶ CE compliant

IPC-400 TEST CONTROL UNIT

The IPC-400 consists of a plug-in module with common-rail high-pressure system control and closed-loop control functionality (1 and 2 actuators) and communication interfaces (USB and CAN). Three power stage modules with two power stages each for injector actuation enable actuation of up to six solenoid injectors (CRI1, CRI2, CRIN1, CRIN2 und CRIN3). As a special feature the IPC-400 enables the parallel operation of solenoid power stages. The flexibility gained through simultaneous injector actuation opens up additional degrees of freedom for test planning and offers considerably shortened test times. Up to 16 partial injections per 720° CrS are possible on each power stage.



IPC-400

TECHNICAL FEATURES

IPC-400	
Dimensions (H x W x D)	320 x 450 x 435 mm 19", 7 RU, 84 HP
Supply voltage	8 – 28 V
Crankshaft speed	60 – 6,000 rpm
Number of CR injectors	max. 6
Number of injections	16 per 720° CrS
Minimum time between injections	20 µs
Injection angle	0 – 720° CrS
Positioning accuracy of angle	+/- 0.1° CrS
Pick-up current	max. 30 A
Holding current	max. 30 A
Boost current	max. 30 A
Current resolution	0.01 A
Hysteresis	0.5 – 15 A
Booster voltage	max. 75 V
Voltage resolution	0.1 V
Perm. ambient temperature	5 °C – 40 °C
PWM frequency	100 Hz – 1 kHz
Control interface	USB, CAN
Complies with provisions of EU directives	2014/30/EU (EMC) 2011/65/EU (RoHS) 2014/35/EU (Low Voltage)

The IPC-400 features a CrS/CaS input (60-2 pattern) to ensure angle-synchronous actuation.

SCOPE OF DELIVERY

IPC-400 test control unit

Common-rail test control unit for solenoid injectors; max. 6 valves; up to 16 partial injections per 720° CrS; simultaneous and parallel power stage actuation; 8 – 28 V voltage supply; high-pressure control 1 and 2 actuator; for CRI1, CRI2, CRIN1, CRIN2 and CRIN3
Design: 19", 7 RU, 84 HP

IPC-CT400 control software

IPC-400 control software; setup file for parameters, measurement and service software for Windows operating system (e.g. XP, 7, 10); measurement data acquisition and onboard data storage

KBPB-IPC400-SET wiring harness set

Wiring harness set (CON1, CON2, CON3, CON4) for CR test benches for operating an IPC-400 test control unit on a component test bench; actuation of 6 injectors; incl. standard-adapters; adapter for CV-injectors can be ordered separately (F037.B00.204-01)

Documentation and installation file

Device-, GUI- and function-documentation and installation files for IPC-CT control software.

Ordering data

Article description	IPC400
Item number	F037.B00.121-02
Price and delivery time / individual solutions	<u>upon request</u>

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