



FlexGen-M BLDC

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BENEFITS

- Convenient control of brushless DC motors (BLDC)
- High-precision position control by means of sinusoidal field-oriented control (FOC)
- Position feedback via analog signal or SENT possible
- PWM power outputs for current vectors up to 10 A
- Rotor position detectable via Hall sensor, encoder or back-EMF

BLDC MOTOR CONTROLLER WITH INTEGRATED POSITION CONTROL

The FlexGen-M BLDC device for controlling 3-phase brushless DC motors (BLDC motors) adds a new, future-proof variant to the product portfolio of PWM generators with integrated power output stage and control function.

A wide input voltage range of 8 V to 28 V and a maximum output current of 10A enable the operation of a large number of servomotors. By focusing on the automotive sector, the device is ideal for development and test bench setups.

The FlexGen-M BLDC has an integrated position control whose control parameters can be fully configured by the user, making the device suitable for a wide range of motors. Position feedback can be provided via a 0 - 5 V analog signal or via a SENT interface according to SAE J2716.

The sinusoidal field-oriented control (FOC) principle is used for optimum commutation of the connected motor. The current rotor position can be detected via Hall sensors or encoders as well as via the feedback electromotive force (Back EMF) using the built-in current measurement sensors.

The absolute motor position as well as mechanical end stops can be detected independently via a teach-in run. For this purpose, the motor is operated with a reduced torque. By defining a soft stop range, the hard approach to mechanical stops can then be prevented during normal operation.

Specification of the setpoint position in normal operation is possible via integrated rotary encoders, an external analog control voltage (0-10V), a configurable ramp movement or via CAN interface. All settings and parameters are displayed on an integrated OLED display. Due to the robust aluminum housing and the high-quality operating elements, the FlexGen-M BLDC is ideally suited for tough, mobile use on test benches and in general industrial applications.

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FIELDS OF APPLICATION

- Control of butterfly valves and actuators such as throttle valves, EGR valves, turbo chargers
- Test and operation of positioning or actuator motors based on brushless motors in the test vehicle and on the test bench
- Stress test of corresponding brushless loads and actuators

TECHNICAL DATA

Designation	Characteristics
Supply voltage	8-28 VDC, internal reverse polarity protection
Maximum output current	10 A
Frequency range	1 Hz - 10 kHz (resolution 1 Hz)
Output type output stage	3-phase DC motor control PWM
Duty cycle	0 - 100%
Analog input	0 - 10V (for external setpoint input)
Analog output	0 - 10V (optional for position feedback)
Position sensor	Analog signal 0 - 5 V or SENT according to SAE J2716 (selectable via software)
PWM output amplitude	Due to internal contact resistors almost identical input voltage
Internal contact resistors between supply and power output	< 50 mΩ
Display	Display 4x20 characters
Control elements	1 x rotary switch (enable) 2 x rotary encoders (menu/value)
Connector	
• Power supply	Banana sockets (red/black)
• Power outputs	Banana sockets (blue/green/yellow)
• Sensor signal	Lemo EXA.1B.303.HLN
• Analog input	BNC
• Analog output (optional)	BNC
• CAN	D-Sub 9-pin male
• USB	USB socket type B
Housing	Aluminum housing with protective caps
Dimensions	200 x 106 x 60 mm
Protection class	IP21
Ambient temperature	-20 °C to +60 °C