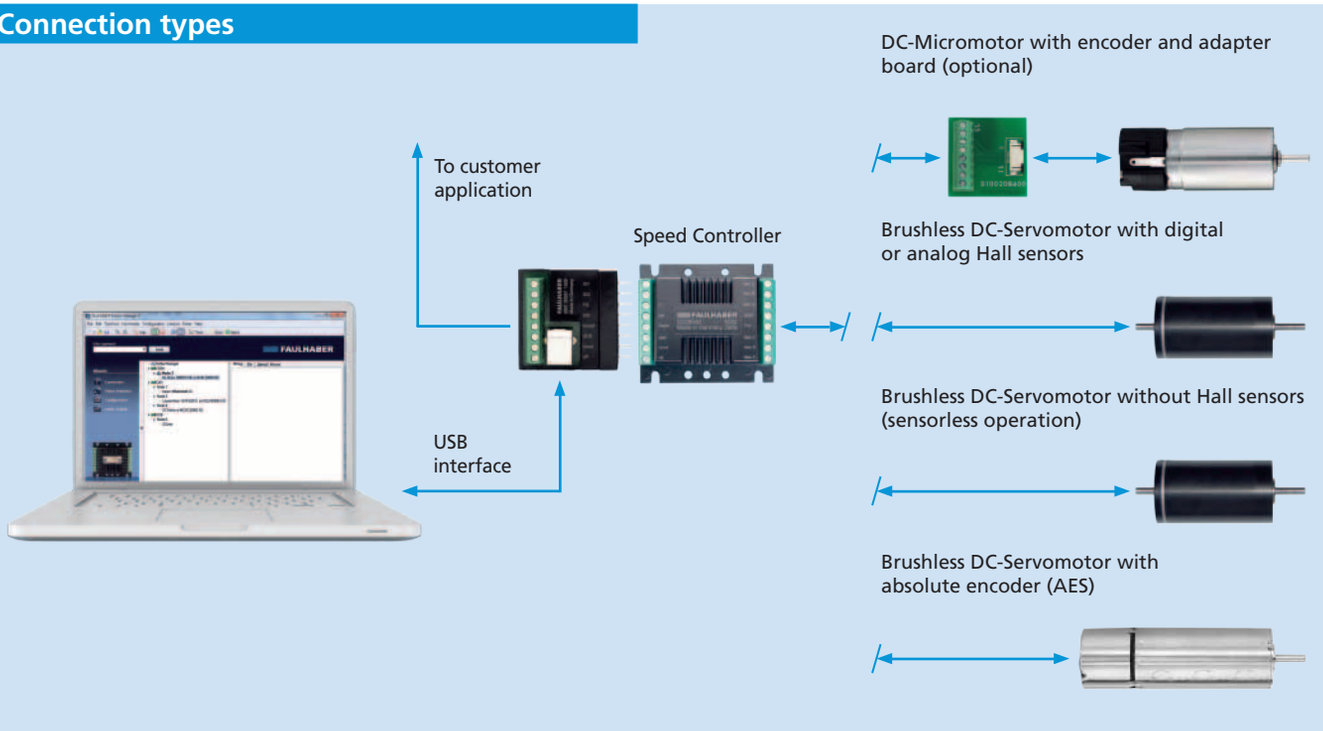
Speed Controller

Technical Information

Connection types



Function

FAULHABER Speed Controllers are highly dynamic speed governors that are optimized for the operation of micromotors.

The Speed Controllers are available as separate controllers for

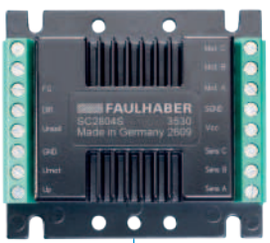
- DC-Micromotors
- Brushless DC-Servomotors.

The minimal wiring requirement and compact design of the Speed Controllers allow them to be used in a wide range of applications. The flexible interfacing options make them suitable for a variety of uses in all areas, e.g. in distributed automation systems, handling and tooling devices or pumps.

Benefits

- Compact design
- Flexible reconfiguration capacity
- Minimal wiring required
- Parameter setting using FAULHABER Motion Manager software and USB interface adapter
- Wide range of accessories

Product code



SC	Speed Controller
28	Max. supply voltage (28V)
04	Max. continuous output current (4A)
S	Housing with screw terminal
3530	Operating mode (brushless motor with digital Hall sensors)

SC 28 04 S 3530

Speed Controller

Description & Operating Modes

Description

Covering almost the entire range of FAULHABER GROUP motors, Faulhaber Speed Controllers are suitable for both Brushless DC-Servomotors (BL motors) and DC-Micromotors (DC motors).

- The Speed Controllers are extremely versatile and can be configured as required using a programming adapter and FAULHABER Motion Manager software.
- Depending on configuration, either a BL motor or DC motor can be run with the appropriate sensors for rotational speed measurement.
- The Speed Controllers are designed as velocity regulators. Control is via a PI controller.
- Sensorless operation, in which the rotational speed is determined by evaluating the counter-EMF (also known as back electromotive force), is also available.
- All Speed Controllers have a current limiter that limits the maximum motor current in the event of excessive thermal loads. In the standard configuration this current limiter is set to the maximum admissible value for the respective Speed Controller.

Standard models

To allow fast setup without programming adapter and software, the Speed Controllers come in various standard models. The variants specified for each type of controller can be reconfigured as required.

Operating modes

Depending on the type of controller, the Speed Controllers can be reconfigured to some or all of the following operating modes (cf. „Note“ below) using a programming adapter and FAULHABER Motion Manager software.

BL motors with digital or analog Hall sensors
In this configuration, the motors are operated with speed control, using the signals from the Hall sensors to commutate and determine the actual speed.

BL motors without Hall sensors (sensorless operation)
Instead of applying Hall sensors, this configuration uses the counter-EMF of the motor for commutation and speed control.

BL motors with absolute encoder
This mode can only be used in conjunction with the relevant hardware. In this configuration the encoder provides absolute position data, which is used for commutation and speed control. Thanks to the encoder signal's high resolution, low rotational speeds can be achieved in this operating mode.

BL motors with digital Hall sensors and brake/enable input
In this configuration the motors are operated with speed control. Thanks to the additional brake/enable inputs, it is easier to connect the controller – e.g. to a PLC or fail-safe circuits.

BL motors with digital Hall sensors and encoder
In this configuration the Hall sensors provide the information for the commutation. The speed is adjusted to the signal from the incremental encoder. This is why a high resolution encoder is able to achieve very low speeds.

DC motors with encoder
In this configuration the motors are operated with speed control. An incremental encoder is necessary to transmit the actual rpm value.

DC motors without encoder
In the sensorless DC motor configuration the motors are operated with speed control using either the counter-electromotive force or an IxR compensation to register the actual rotational speed, depending on load. This operating mode has to be matched to the motor type.

In addition, other parameters can be modified using the **FAULHABER Motion Manager software**:

- Controller parameters
- Output current limitation
- Fixed rotational speed
- Encoder resolution
- Rpm setpoint via analog or PWM signal
- Maximum rotational speed or speed range

Note

Device manuals for installation and putting into operation and the „FAULHABER Motion Manager“ software are available on request and on the Internet at www.faulhaber.com. Please note that not all Speed Controllers are suitable for all operating modes. Detailed information on the various operating modes is provided in the respective data sheets.