



Lexium SD3 drive and BRS3 stepper motor combinations

Presentation

BRS3 motors are 3-phase stepper motors. Their robust design ensures that only minimum maintenance is required.

They carry out precise step-by-step movements that are predefined by a stepper motor drive.

Maximum power is obtained when the motor and electronics are perfectly tuned to each other.

When used with the appropriate drive, 3-phase stepper motors can be operated at very high resolutions.

Management of motor disturbance

The sinusoidal commutation and special mechanical design of BRS3 3-phase stepper motors mean that they are very quiet and run with virtually no resonance.

Optimized power

The optimized internal geometry of BRS3 stepper motors means they are more powerful than conventional stepper motors.

Flexibility

The modularity of the offer makes it possible to provide a quick solution to meet the specific needs of each application.

Options

Options, such as the holding brake or encoder, as well as rugged planetary gearboxes without mechanical backlash, increase the performance of the system.

Holding brake

BRS3 motors offer a version that allows the addition of a holding brake (see references pages 44 to 47).

The holding brake is an electromagnetic pressure spring brake which locks the motor shaft when the motor current is cut (for example, in the event of a fault or an Emergency Stop), thereby significantly increasing safety.

Locking of the motor shaft is also necessary in cases of torque overload, for example during vertical movement.

The connector (Hirschmann G4 A 5M) is supplied.

Note: The holding brake option cannot be used if the motor is equipped with a second shaft end.

Encoder

BRS3 3-phase stepper motors can be equipped with an encoder (see references pages 44 to 47).

If the stepper motor drive is equipped with an electronic rotation monitoring system, the encoder can be used as a system for measuring the actual position of the rotor.

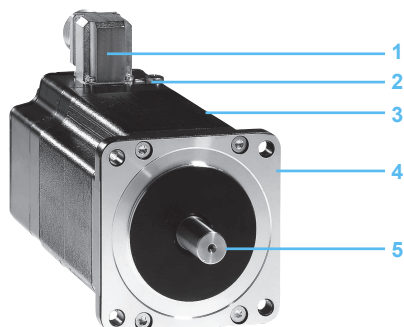
Using the encoder makes it possible to compare the calculated position reference with the actual position of the motor. If a following deviation limit is exceeded, a rotation fault is signalled, for example in the event of "mechanical stiffness".

The use of an encoder also provides the added benefit of temperature measurement via an integrated sensor.

Note: Motors with encoder are equipped with an additional connector. The encoder option is not compatible with the second shaft end option.

Planetary gearboxes

To complete the BRS3 motor range, Schneider Electric offers planetary gearboxes which can be used to adapt rotation speeds and torques while ensuring high precision. See page 48.

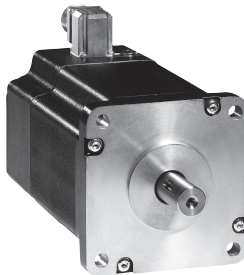


Description

BRS3 motors comprise:

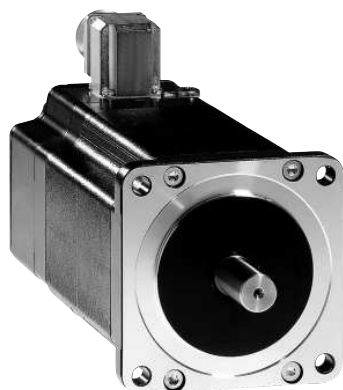
- 1 Motor connection: version with angled connector
- 2 Additional earthing terminal
- 3 Housing, with black protective coating
- 4 Axial flange with four mounting points conforming to standard DIN 42918
- 5 Smooth shaft end conforming to standard DIN 42918

BRS3 motor offer

3-phase stepper motors			BRS	364	366	368	397	39A	39B	3AC	3AD
											
Flange size	—	mm	57			85			110		
Maximum torque	$M_{\max}$	Nm	0.45...1.50			1.7...6.0			12.0...16.5		
Holding torque	M_H	Nm	0.45...1.70			1.92...6.78			13.5...19.7		
Number of steps	z	—	200 / 400 / 500 / 1000 / 2000 / 4000 / 5000 / 10 000								
Step angle	α	°	1.8 / 0.9 / 0.72 / 0.36 / 0.18 / 0.09 / 0.072 / 0.036								
Phase current	W winding	A_{rms}	—			0.9	1.75	2	2.25	4.1	4.75
	H winding		5.2	5.8	5.8			—			
Weight	—	kg	0.7	0.95	2	2.1	3.2	4.3	8.2	11.2	
Degree of protection according to standard IEC/EN 60034-5	—	—	IP 56 (except for shaft end - IP 41)								
Ambient air temperature	—	°C	- 25...+ 40								
Winding insulation class according to standard IEC/EN 60034-1	—	—	F (maximum temperature for windings 155°C)								



BRS368 stepper motor



BRS39 stepper motor

BRS36 stepper motor

Example:	B	R	S	3	6	8	W	1	3	1	A	B	A
Motor type S = stepper motor	B	R	S	3	6	8	W	1	3	0	A	B	A
Number of motor phases 3 = 3 phases	B	R	S	3	6	8	W	1	3	1	A	B	A
Flange size 6 = 57 mm	B	R	S	3	6	8	W	1	3	1	A	B	A
Motor length 8 = 79 mm	B	R	S	3	6	8	W	1	3	1	A	B	A
Maximum voltage W = 230 V ~ (325 V ...)	B	R	S	3	6	8	W	1	3	1	A	B	A
Shaft type 0 = Ø 6.35 mm smooth shaft, IP 41 1 = Ø 8 mm smooth shaft, IP 41	B	R	S	3	6	8	W	1	3	1	A	B	A
Centering collar 3 = 38 mm	B	R	S	3	6	8	W	1	3	1	A	B	A
Encoder (1) 0 = without encoder 1 = with encoder (1000 points/turn)	B	R	S	3	6	8	W	1	3	1	A	B	A
Holding brake (1) A = without holding brake F = with holding brake	B	R	S	3	6	8	W	1	3	1	A	B	A
Type of connection B = terminals C = connector	B	R	S	3	6	8	W	1	3	1	A	B	A
Second shaft end (1) A = without second shaft end B = with second shaft end	B	R	S	3	6	8	W	1	3	1	A	B	A

BRS39 stepper motor

Example:	B	R	S	3	9	7	W	2	6	0	A	B	A
Motor type S = stepper motor	B	R	S	3	9	7	W	2	6	0	A	B	A
Number of motor phases 3 = 3 phases	B	R	S	3	9	7	W	2	6	0	A	B	A
Flange size 9 = 85 mm	B	R	S	3	9	7	W	2	6	0	A	B	A
Motor length 7 = 68 mm A = 98 mm B = 128 mm	B	R	S	3	9	7	W	2	6	0	A	B	A
Maximum voltage W = 230 V ~ (325 V ...)	B	R	S	3	9	7	W	2	6	0	A	B	A
Shaft type (2) 2 = Ø 9.5 mm smooth shaft, IP 41 3 = Ø 12 mm smooth shaft, IP 41 4 = Ø 14 mm smooth shaft, IP 41 5 = Ø 9.5 mm disc key, IP 41 6 = Ø 12 mm disc key, IP 41 7 = Ø 14 mm disc key, IP 41	B	R	S	3	9	7	W	2	6	0	A	B	A
Centering collar 6 = 60 mm 7 = 73 mm	B	R	S	3	9	7	W	2	6	0	A	B	A
Encoder (1) 0 = without encoder 1 = with encoder (1000 points/turn)	B	R	S	3	9	7	W	2	6	0	A	B	A
Holding brake (1) A = without holding brake F = with holding brake	B	R	S	3	9	7	W	2	6	0	A	B	A
Type of connection B = terminals C = connector	B	R	S	3	9	7	W	2	6	0	A	B	A
Second shaft end (1) A = without second shaft end B = with second shaft end	B	R	S	3	9	7	W	2	6	0	A	B	A

(1) The "Holding brake" and "Encoder" options are not compatible with the "Second shaft end" option.

(2) Possible motor/shaft type combinations depending on the length of the motor:

- Motor length 7 = 2, 3, 5, 6
- Motor length A = 2, 3, 5, 6
- Motor length B = 4, 7