3-phase stepper motor - 6.78 Nm - shaft  $\varnothing$  14 mm - L=128 mm - with brake - conn





#### Main

Range compatibility	Lexium SD3
Product or component type	Motion control motor
Device short name	BRS3
Maximum mechanical speed	3000 rpm
Motor type	3-phase stepper motor
Number of motor poles	6
Supply voltage limits	230 V AC 325 V DC
Mounting support	Flange
Motor flange size	85 mm
Length	171 mm
Centring collar diameter	60 mm

#### Complementary

Centring collar depth	2 mm	
Number of mounting holes	4	
Mounting holes diameter	6.5 mm	
Circle diameter of the mounting holes	98.99 mm	
Electrical connection	Connector	
Feedback type	Single turn encoder	
Speed feedback resolution	10000 points/turn	
Holding brake	With	
Shaft end	Untapped	
Second shaft	Without second shaft end	
Shaft diameter	14 mm	
Shaft length	30 mm	
Nominal torque	6 N.m	
Peak stall torque	5.78 N.m	
Continuous stall torque	5.78 N.m	
Holding torque	6.78 N.m	
Rotor inertia	3.3 kg.cm²	
Resolution	1000 points/turn 1.8°, 0.9°, 0.72°, 0.36°, 0.18°, 0.09°, 0.072°, 0.036° step angle 200, 400, 500, 1000, 2000, 4000, 5000, 10000 steps number of full steps per revolution	
Accuracy error	+/- 6 arc min	
Maximum starting frequency	5.3 kHz	
[In] rated current	2.25 A	
Resistance	6.5 Ohm (winding)	
Time constant	10 ms	
Maximum radial force Fr	110 N (first shaft end) 50 N (second shaft end)	
Maximum axial force Fa	175 N (tensile force) 30 N (force pressure)	
Service life in hours	20000 h (bearing)	

Angular acceleration	200000 rad/s²
Net weight	4.3 kg

#### Environment

Standards	IEC 50347 IEC 60072-1	
Type of cooling	Natural convection	
Ambient air temperature for operation	-2540 °C	
Ambient air temperature for storage	-2570 °C	
Operating altitude	<= 1000 m without power derating	
Relative humidity	1585 % without condensation	
Vibration resistance	20 m/s² maximum A conforming to IEC 60034-14	
IP degree of protection	IP41 shaft bushing: conforming to IEC 60034-5 IP56 total except shaft bushing: conforming to IEC 60034-5	
Temperature class	F winding conforming to IEC 60034-1	

### Packing Units

· coming or mo	
Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	19.5 cm
Package 1 Width	22 cm
Package 1 Length	40 cm
Package 1 Weight	6.97 kg
Unit Type of Package 2	S06
Number of Units in Package 2	6
Package 2 Height	73.5 cm
Package 2 Width	60 cm
Package 2 Length	80 cm
Package 2 Weight	54.82 kg
Unit Type of Package 3	P06
Number of Units in Package 3	12
Package 3 Height	77 cm
Package 3 Width	80 cm
Package 3 Length	60 cm
Package 3 Weight	92.14 kg

### Offer Sustainability

Sustainable offer status	Green Premium product	
REACh Regulation	REACh Declaration	
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope)	
Mercury free	Yes	
China RoHS Regulation	☑ China RoHS Declaration	
RoHS exemption information	₫Yes	
Environmental Disclosure	Product Environmental Profile	
Circularity Profile	No need of specific recycling operations	
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins	
PVC free	Yes	

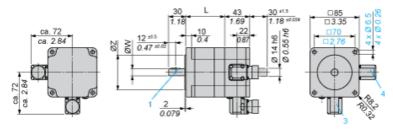
#### Contractual warranty

Marranti	10 months	
Warranty	18 months	

#### **Dimensions**

#### 3-Phase Stepper Motor in Connector Version

in.

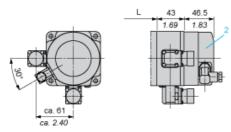


3: Motor connection 6 poles

4: Motor connection (optional) 12 poles

#### Holding Brake

mm



#### 2: Holding brake (optional)

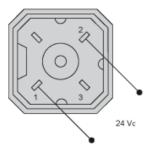
Dimensions in mm

L	Shaft diameter ØW	Centring collar ØZ	Woodruff key DIN 6888 (1)
127.5 (+0.6) (-0.8)	14 h6	60 h8	5 x 6.5

Dimensions in in.

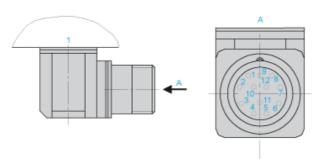
L	Shaft diameter ØW	Centring collar ØZ	Woodruff key DIN 6888 (1)
5.02 (+0.023) (-0.031)	0.55 h6	2.36 h8	0.20 x 0.25

#### Wiring Diagram of Holding Brake



The connector is part of the scope of delivery. Connector designation: Hirschmann type G4 A 5M

#### Wiring Diagram of Encoder Plug on BRS3.

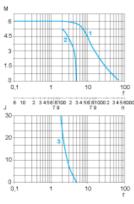


#### 1: Motor housing

. Motor rousing		
Pin	Designation	
1	A	
2	A negated	
3	В	
4	B negated	
5	C, I	
6	C negated, I negated	
7	5 V <sub>GND</sub>	
8	+ 5	
9	-SENSE	
10	+SENSE	
11	Temperature sensor	
12	Not connected	

#### **Torque Characteristics**

Measurement at 1000 Steps/Revolution, Nominal Voltage DC Bus  $U_{N}$  and Phase Current  $I_{N}$ 



M: Torque in Nm
n: Speed in rpm
f: Frequency in kHz
J: Rotor inertia in kg.cm²
1: Pull-out torque
2: Pull-in torque
3: Maximum load inertia