

3-phase stepper motor - 6.78 Nm - shaft Ø 14mm - L=128mm - w/o brake - conn

BRS39BW461ACA

EAN Code: 3389119224109

### 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

Number of mounting holes 4  Mounting holes diameter 6.5 mm  Circle diameter of the mounting 98.99 mm holes  Electrical connection Connector  Feedback type Single turn encoder  Speed feedback resolution 10000 points/turn  Holding brake Without  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 6.78 N.m  Holding torque 6.78 N.m		
Mounting holes diameter 6.5 mm  Circle diameter of the mounting holes  Electrical connection Connector  Feedback type Single turn encoder  Speed feedback resolution 10000 points/turn  Holding brake Without  Shaft end Untapped  Second shaft Without second shaft end  Shaft length 30 mm  nominal torque 6 N.m  Peak stall torque 5.78 N.m  Holding torque 6.78 N.m  Holding torque 6.78 N.m	centring collar depth	2 mm
Circle diameter of the mounting holes  Electrical connection Connector  Feedback type Single turn encoder  Speed feedback resolution 10000 points/turn  Holding brake Without  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  Holding torque 6.78 N.m	Number of mounting holes	4
Electrical connection Connector  Feedback type Single turn encoder  Speed feedback resolution 10000 points/turn  Holding brake Without  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  Holding torque 6.78 N.m  Holding torque 6.78 N.m	Mounting holes diameter	6.5 mm
Feedback type Single turn encoder  Speed feedback resolution 10000 points/turn  Holding brake Without  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  Holding torque 6.78 N.m	Circle diameter of the mounting holes	98.99 mm
Speed feedback resolution 10000 points/turn  Holding brake Without  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 6.78 N.m  Holding torque 6.78 N.m	Electrical connection	Connector
Holding brake Without  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	Feedback type	Single turn encoder
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 6.78 N.m	Speed feedback resolution	10000 points/turn
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	Holding brake	Without
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	Shaft end	Untapped
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	Second shaft	Without second shaft end
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	Shaft diameter	14 mm
Peak stall torque 5.78 N.m  Continuous stall torque 5.78 N.m  Holding torque 6.78 N.m	Shaft length	30 mm
Continuous stall torque 5.78 N.m Holding torque 6.78 N.m	nominal torque	6 N.m
Holding torque 6.78 N.m	Peak stall torque	5.78 N.m
	Continuous stall torque	5.78 N.m
Rotor inertia 3.3 kg.cm²	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	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**

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	19.500 cm
Package 1 Width	22.000 cm
Package 1 Length	40.000 cm
Package 1 Weight	5.641 kg
Unit Type of Package 2	S04
Number of Units in Package 2	2
Package 2 Height	30.000 cm
Package 2 Width	40.000 cm
Package 2 Length	60.000 cm
Package 2 Weight	11.932 kg
Unit Type of Package 3	P06

Number of Units in Package 3	8
Package 3 Height	75.000 cm
Package 3 Width	80.000 cm
Package 3 Length	60.000 cm
Package 3 Weight	55.728 kg

# **Logistical informations**

Country of origin DE

# **Contractual warranty**

Warranty 18 months



Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing "Use Better, Use Longer, Use Again" campaign to extend product lifetimes and recyclability.

#### Environmental Data explained >

How we assess product sustainability >

∇ Environmental footprint	
Carbon footprint (kg.eq.CO2 per CR, Total Life cycle)	1832
Environmental Disclosure	Product Environmental Profile

#### **Use Better**

Packaging made with recycled cardboard	Yes
Packaging without single use plastic	No
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope)
REACh Regulation	REACh Declaration
PVC free	Yes

#### **Use Again**

○ Repack and remanufacture		
Circularity Profile	No need of specific recycling operations	
Take-back	No	
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins	

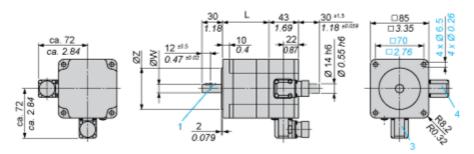
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#### **Dimensions Drawings**

#### **Dimensions**

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

in.



3: Motor connection 6 poles

4: Motor connection (optional) 12 poles

#### 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

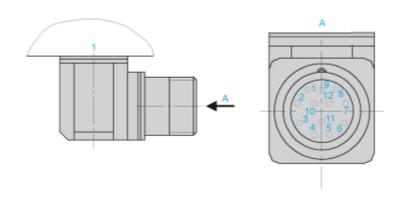
#### Dimensions in in.

Differencial 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

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### Connections and Schema

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



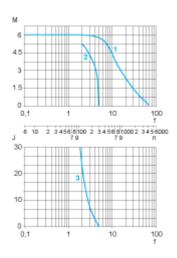
#### 1: Motor housing

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

#### Performance Curves

#### **Torque Characteristics**

# Measurement at 1000 Steps/Revolution, Nominal Voltage DC Bus $\mathbf{U_N}$ and Phase Current $\mathbf{I_N}$



M: Torque in Nm

n: Speed in rpm

f: Frequency in kHz

J: Rotor inertia in kg.cm<sup>2</sup>

1: Pull-out torque

2: Pull-in torque

3: Maximum load inertia