

Product data sheet

Specifications



3-phase stepper motor - 13.5 Nm - shaft $\tilde{\text{A}} \sim 19\text{mm}$ - L=180 mm - with brake- connector

BRS3ACW851FCA

Product availability: Non-Stock - Not normally stocked in distribution facility

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	4.3 in (110 mm)
Length	7.09 in (180 mm)
Centring collar diameter	2.2 in (56 mm)

Complementary

centring collar depth	0.1 in (3 mm)
Number of mounting holes	4
Mounting holes diameter	0.4 in (9 mm)
Circle diameter of the mounting holes	4.96 in (125.86 mm)
Electrical Connection	Connector
Feedback type	Index pulse
Speed feedback resolution	10000 points/turn
Holding brake	With
Shaft end	Parallel key
Second shaft	Without second shaft end
Shaft diameter	0.7 in (19 mm)
Shaft length	1.6 in (40 mm)
nominal torque	106.2 lbf.in (12 N.m)
Peak stall torque	101.08 lbf.in (11.42 N.m)
Continuous stall torque	101.08 lbf.in (11.42 N.m)
Holding torque	119.5 lbf.in (13.5 N.m)
Rotor inertia	10.5 kg.cm ²

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Resolution	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 1000 points/turn
Accuracy error	+/- 6 arc min
Maximum starting frequency	4.7 kHz
Line Rated Current	4.1 A
Resistance	1.8 Ohm winding)
Time constant	22 ms
Maximum radial force Fr	150 N second shaft end) 300 N first shaft end)
Maximum axial force Fa	330 N tensile force) 60 N force pressure)
Service life in hours	20000 h bearing)
Angular acceleration	200000 rad/s ²
Net Weight	18.08 lb(US) (8.2 kg)

Environment

Standards	IEC 60072-1 IEC 50347
type of cooling	Natural convection
Ambient Air Temperature for Operation	-13...104 °F (-25...40 °C)
Ambient Air Temperature for Storage	-13...158 °F (-25...70 °C)
Operating altitude	<= 3280.84 ft (1000 m) without power derating
Relative humidity	15...85 % without condensation
Vibration resistance	20 m/s ² maximum A 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 IEC 60034-1

Ordering and shipping details

Category	US1PC5518284
Discount Schedule	PC55
GTIN	3389119224222
Returnability	No
Country of origin	DE

Packing Units

Unit Type of Package 1	PCE
Nbr. of units in pkg.	1
Package 1 Height	7.48 in (19.000 cm)
Package 1 Width	8.66 in (22.000 cm)
Package 1 Length	15.75 in (40.000 cm)
Package weight(Lbs)	24.996 lb(US) (11.338 kg)

Unit Type of Package 2	P06
Number of Units in Package 2	8
Package 2 Height	29.53 in (75.000 cm)
Package 2 Width	31.50 in (80.000 cm)
Package 2 Length	23.62 in (60.000 cm)
Package 2 Weight	217.605 lb(US) (98.704 kg)

Contractual warranty

Warranty	18 months
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Environmental Data

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 CO2 eq, Total Life cycle) 3473

Environmental Disclosure [Product Environmental Profile](#)

Use Better

Materials and Substances

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](#)

California proposition 65 **WARNING:** This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

PVC free Yes

Use Again

Repack and remanufacture

Circularity Profile No need of specific recycling operations

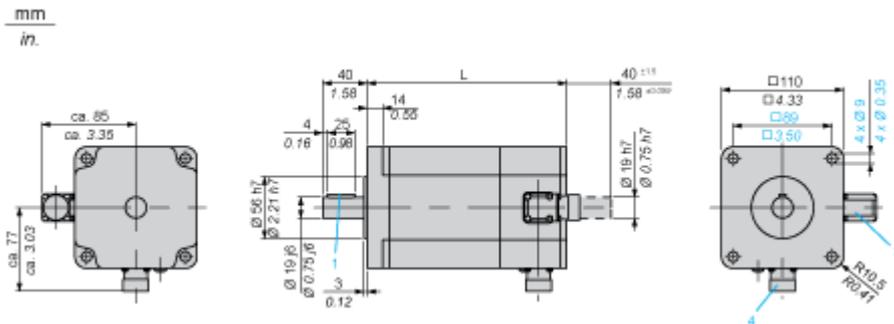
Take-back No

WEEE  The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.

Dimensions Drawings

Dimensions

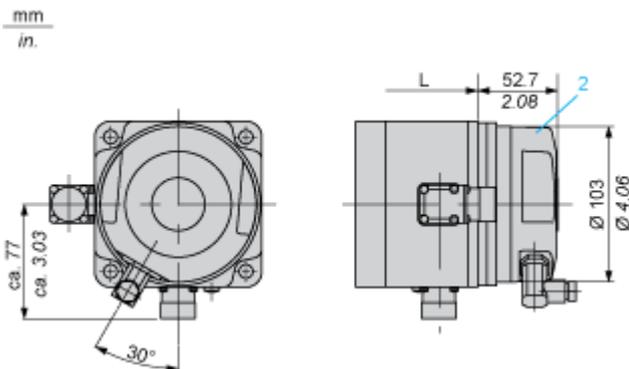
3-Phase Stepper Motor in Connector Version



3 : Plug connection encoder (optional) 12 poles

4 : Plug connection motor 6 poles

Holding Brake



2 : Holding brake (optional)

Dimensions in mm

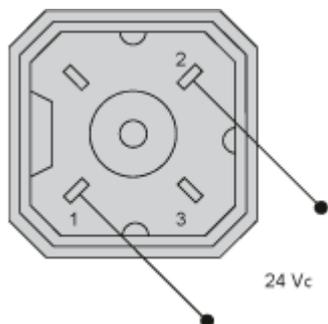
L	Parallel key DIN 6885 (1)
180 ±1	6 x 6 x 25

Dimensions in in.

L	Parallel key DIN 6885 (1)
7.09 ±0.039	0.24 x 0.24 x 0.98

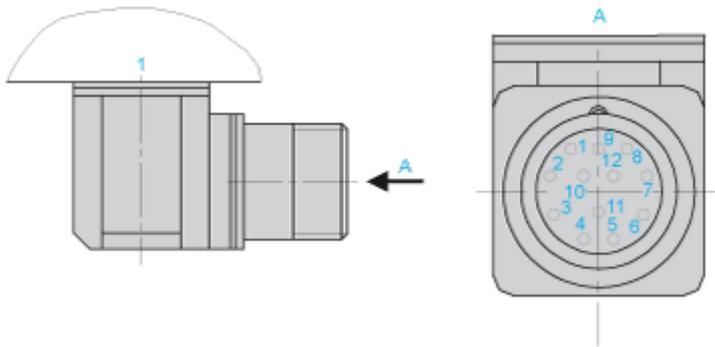
Connections and Schema

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••



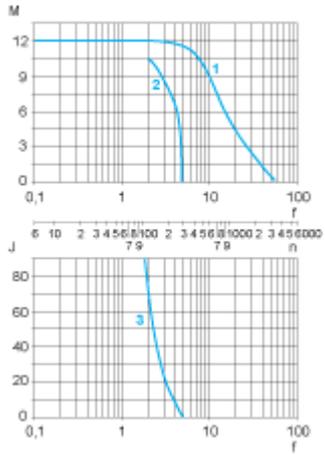
1 : Motor housing

Pin	Designation
1	A
2	A negated
3	B
4	B negated
5	C, I
6	C negated, I negated
7	5 V _{GND}
8	+ 5
9	-SENSE
10	+SENSE
11	Temperature sensor
12	Not connected

Performance Curves

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