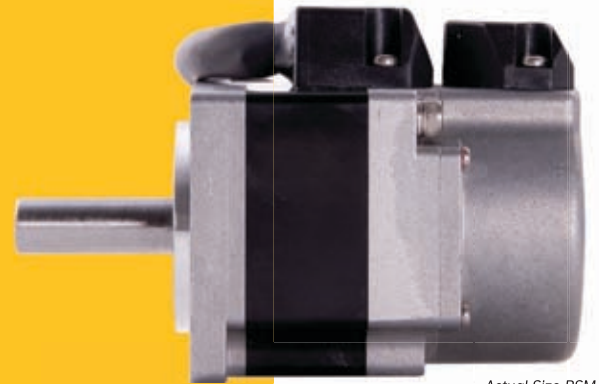




Brushless AC Servo Motors BSM R-Series

- › **Compact rugged brushless motors**
- › **50, 100, 200, 400 watt output**
- › **Torque sizes 0.16 to 1.27 Nm
(1.4 - 11.2 lb-in)**
- › **Resolver or Encoder feedback**
- › **Optional 24 VDC brake**
- › **UL/CE**



Actual Size BSM40R



Actual Size BSM60R

Baldor's BSM R-series motors enables applications to make use of the benefits of brushless technology - less maintenance, quieter operation, faster acceleration, higher torque and power output.

The BSM R-series motors presents a compact size compared to conventional units. These motors provide a high torque to inertia ratio and high acceleration capability. The compact BSM R-Series motors provide continuous stall torque ratings from 0.16 to 1.27 Nm (1.4 - 11.2 lb-in), with peak torques of 3 times.

This series of motors has been designed to be durable to provide long life. They conform to UL and CE industrial standards and are available with either metric mounting or NEMA (stepping motor) mounting configurations.

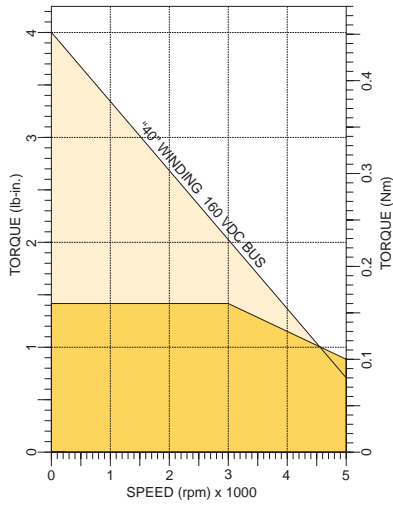
This series of motors is ideally suited for use with Baldor's motion controllers, especially the MicroFlex AC servo drive family (request BR1202-D).

Typical Applications

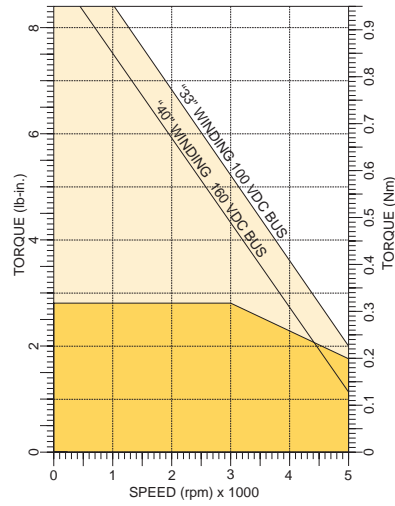
- › Labeling machines
- › Flying shears
- › Robotics
- › Material handling
- › Packaging
- › Winding machines
- › Printing machines
- › Semiconductor manufacturing
- › Pharmaceuticals

Performance Data

BSM40R-240



BSM40R-333 & BSM40R-340



General		BSM40R-240	BSM40R-333	BSM40R-340
Continuous Stall Torque	lb-in	1.42	2.81	2.81
	Nm	0.16	0.318	0.318
Continuous Stall Current	amps	0.5	1.8	1
Peak Torque	lb-in	4.25	8.41	8.41
	Nm	0.48	0.95	0.95
Peak Current	amps	1.6	5.3	3
Mechanical Time Constant	msec	0.9	0.67	0.7
Electrical Time Constant	msec	1.1	1.66	1.57
Thermal Resistance (Max Temp of 90° C)	deg C/watt	8.7	4.6	4.9
Rated Speed	rpm	3000	3000	3000
Rated Output	watts	50	100	100

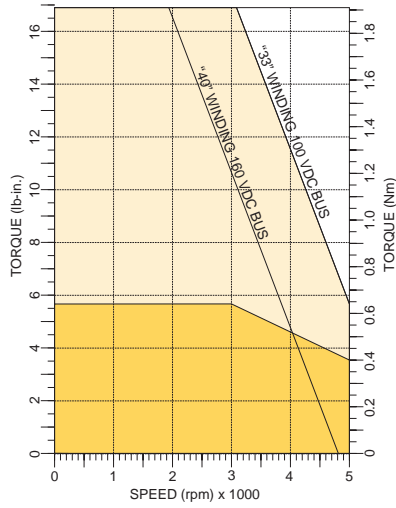
Electrical				
Torque Constant	lb-in/amp	2.7	1.6	2.8
	Nm/a	0.31	0.18	0.32
Voltage Constant	Vpk/krpm	26.5	15.5	27.2
	Vrms/Krpm	18.9	11.1	19.4
Resistance	ohms	30.6	4.4	13.6
Inductance	mhy	34.6	7.3	21.4

Mechanical				
Inertia	lb-in-s ² x10 ⁻³	0.018	0.031	0.031
	Kg-cm ²	0.02	0.035	0.035
Maximum Speed	rpm	5000	5000	5000
Number of Motor Poles		8	8	8
Motor Weight	Kg	0.4	0.5	0.5
	lb	0.88	1.1	1.1

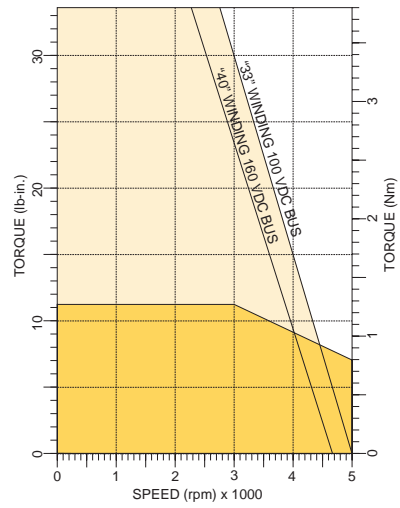
	Maximum Shaft Loading		Minimum Mounting Plate	
BSM40R	Radial Shaft Load 20mm from mounting surface	lbs/N	inches	mm
		17.6/78.4	8 x 8 x 0.5	200 x 200 x 12

Brake Data	Braking holding torque		Watts	Brake Voltage	Brake Times (msec)		Brake Inertia		Brake Weight	
	lb-in	Nm			Pull-in	Pull-out	lb-in-s ² x10 ⁻³	Kg-cm ²	lbs	Kg
BSM40R-2	2.8	0.32	5	24	40	20	0.026	0.03	0.44	0.2
BSM40R-3, BSM4NR-3	2.8	0.32	5	24	40	20	0.022	0.025	0.44	0.2

BSM60R-233 & BSM60R-240



BSM60R-333 & BSM60R-340



General		BSM60R-233	BSM60R-240	BSM60R-333	BSM60R-340
Continuous Stall Torque	lb-in	5.66	5.66	11.24	11.24
	Nm	0.64	0.64	1.27	1.27
Continuous Stall Current	amps	3.5	1.6	5.6	3.2
Peak Torque	lb-in	16.8	16.8	33.6	33.6
	Nm	1.9	1.9	3.8	3.8
Peak Current	amps	10	5	16.3	9.7
Mechanical Time Constant	msec	0.76	0.9	0.66	0.6
Electrical Time Constant	msec	3.25	3.2	3.25	3.8
Thermal Resistance (Max Temp of 90° C)	deg C/watt	4.5	5.2	2.6	3.2
Rated Speed	rpm	3000	3000	3000	3000
Rated Output	watts	200	200	400	400

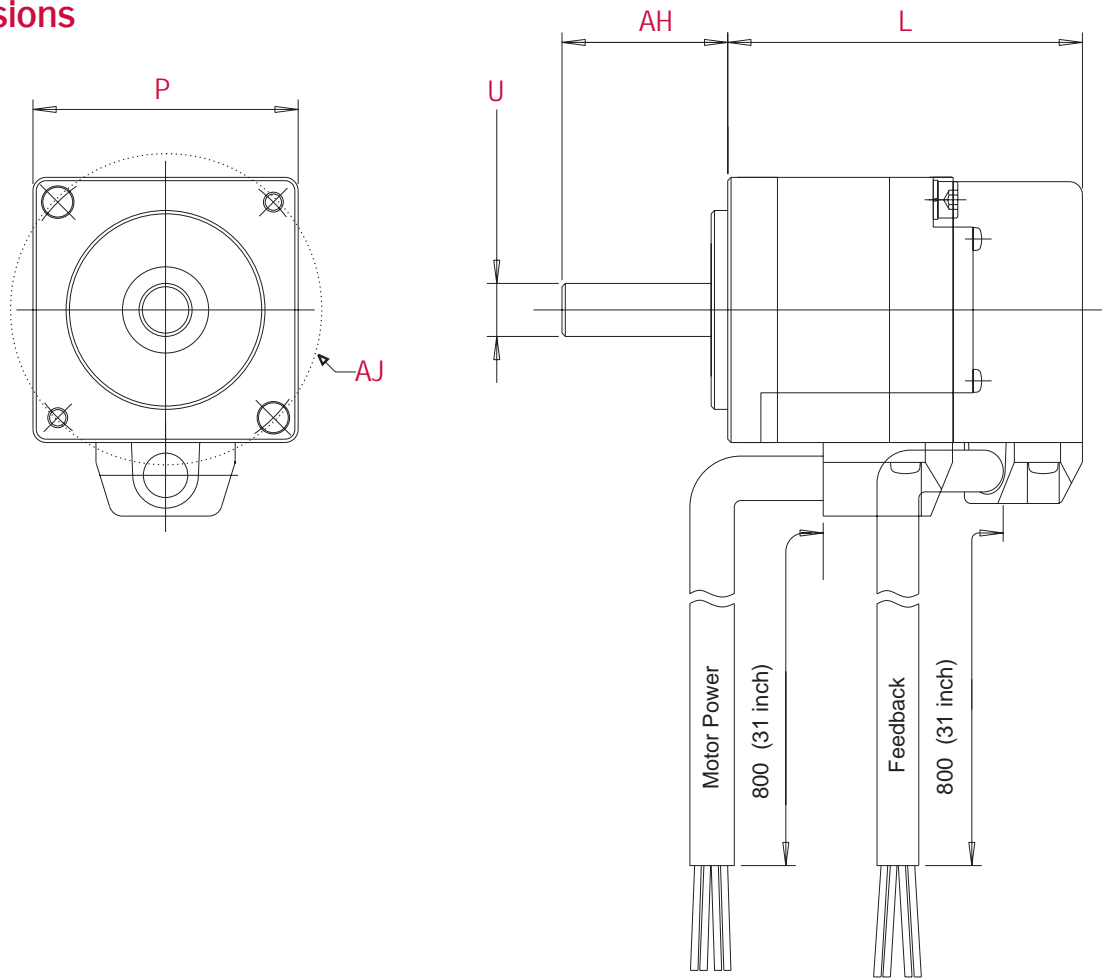
Electrical					
Torque Constant	lb-in/amp	1.8	3.5	2.1	3.5
	Nm/a	0.2	0.39	0.24	0.4
Voltage Constant	Vpk/krpm	16.5	32.2	20.0	33.6
	Vrms/Krpm	11.8	23	14.3	24
Resistance	ohms	1.2	5	0.8	2
Inductance	mhy	3.9	16	2.6	7.4

Mechanical					
Inertia	lb-in-s ² x 10 ⁻³	0.158	0.158	0.299	0.299
	Kg-cm ²	0.18	0.18	0.34	0.34
Maximum Speed	rpm	5000	5000	5000	5000
Number of Motor Poles		8	8	8	8
Motor Weight	Kg	0.9	0.9	1.3	1.3
	lb	1.98	1.98	2.86	2.86

BSM60R	Maximum Shaft Loading		Minimum Mounting Plate		
	Radial Shaft Load 20mm from Mounting Surface		lbs/N	inches	mm
			44/196	12 x 12 x 0.5	300 x 300 x 12

Brake Data	Braking holding torque		Watts	Brake Voltage	Brake Times (msec)		Brake Inertia		Brake Weight	
	lb-in	Nm			Pull-in	Pull-out	lb-in-s ² x 10 ⁻³	Kg-cm ²	lbs	Kg
BSM60R-2, BSM6NR-3	11.2	1.27	8	24	50	20	0.088	0.1	0.44	0.2
BSM60R-3, BSM6NR-3	11.2	1.27	8	24	50	20	0.088	0.1	1.1	0.5

› Dimensions

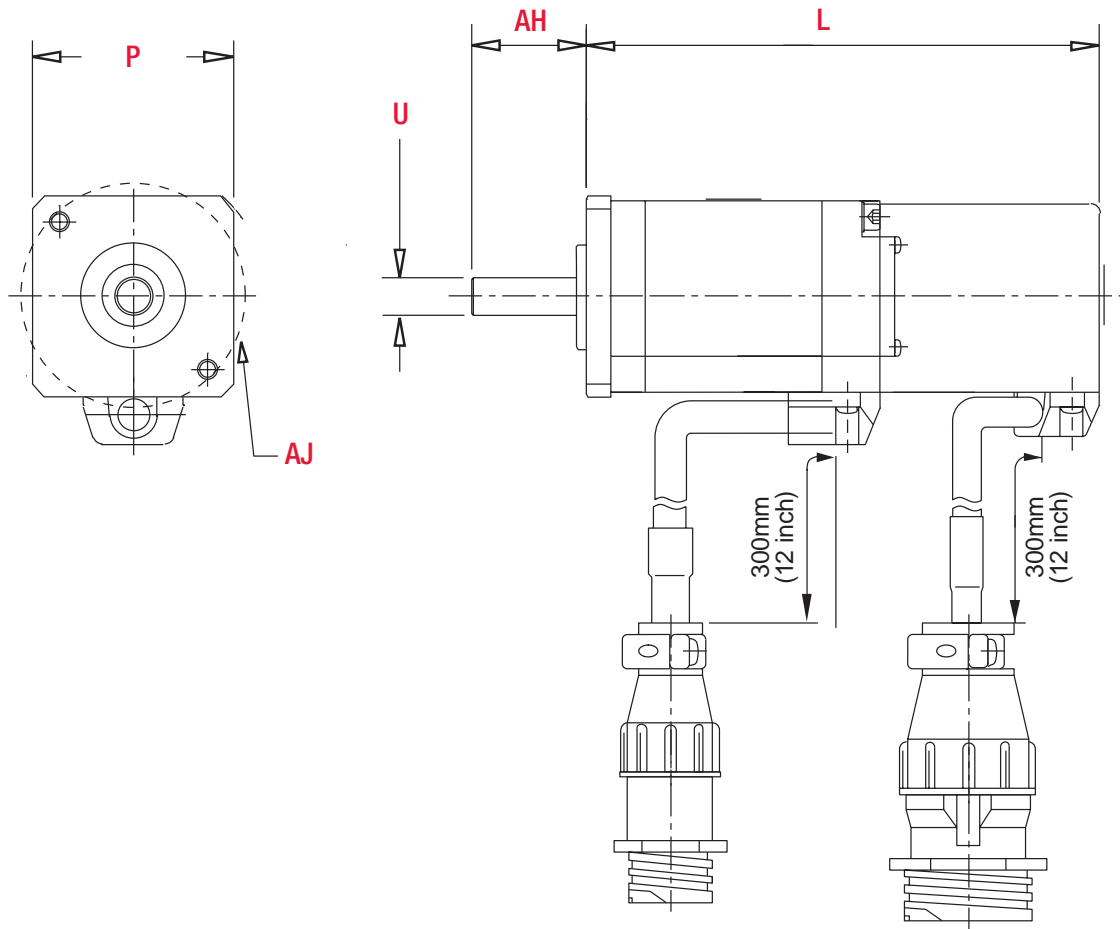


Metric Mounting with kit encoder or resolver

						Flange Width		Length		Shaft Dia		Shaft Length		Mounting	Cable Length		
Size	Watts	Feedback	Brake	Winding	Catalog(1)	P		L		U		AH		AJ	(no connector)		
						mm	inch	mm	inch	mm	inch	mm	inch	mm	mm	inch	
40	50	specify (1)	-	200v	BSM40R-240Mx	40	1.57	59	2.32	8	0.314	25	0.98	4.5mm (2ea) thru hole 46mm BC	800	31	
40	50		yes		BSM40R-240Nx			95	3.74								
40	100		-		BSM40R-340Mx			73	2.87								
40	100		yes		BSM40R-340Nx			109	4.29								
60	200		-		BSM60R-240Mx	60	2.36	76	3	14	0.551	30	1.18				5.5mm (4ea) thru hole 70mm BC
60	200		yes		BSM60R-240Nx			111	4.37								
60	400		-		BSM60R-340Mx			98	3.86								
60	400		yes		BSM60R-340Nx			132	5.2								

(1) In place of "x" specify feedback G = 2000ppr encoder or A = resolver

› Dimensions



Metric Mounting with bearing type encoder

						Flange Width		Length		Shaft Dia		Shaft Length		Mounting	Cable Length		
						P		L		U		AH		AJ	(connector)		
Size	Watts	Feedback	Brake	Winding	Catalog	mm	inch	mm	inch	mm	inch	mm	inch	mm	mm	inch	
40	100	2000 ppr	-	100V	BSM40R-333MGC	40	1.57	101	3.97	8	0.314	25	0.98	4.5mm (2ea) thru hole 46mm BC	300	12	
40	100		yes		BSM40R-333NGC			136	5.35								
60	200		-		BSM60R-233MGC	60	2.36	103	4.05	14	0.551	30	1.18				5.5mm (4ea) thru hole 70mm BC
60	200		yes		BSM60R-233NGC			135	5.31								
60	400		-		BSM60R-333MGC			126	4.95								
60	400		yes		BSM60R-333NGC			160	6.3								

NEMA Mounting with bearing type encoder

						Flange Width		Length		Shaft Dia		Shaft Length		Mounting	Cable Length		
						P		L		U		AH		AJ	(connector)		
Size	Watts	Feedback	Brake	Winding	Catalog	mm	inch	mm	inch	mm	inch	mm	inch	mm	mm	inch	
17	100	2000 ppr	-	100v	BSM4NR-333MGC	42	1.65	105	4.13	6.35	0.25	24	0.94	2 x #8-32 UNC TAP 1.7 inch BC	300	12	
17	100		yes		BSM4NR-333NGC			141	5.55								
23	200		-		BSM6NR-233MGC	2x56.4	2.22	126	4.96	12.7	0.5	20.6	0.81				4 x 0.21 thru hole 2.6 inch BC
23	200		yes		BSM6NR-233NGC			161	6.33								
23	400		-		BSM6NR-333MGC			149	5.86								
23	400		yes		BSM6NR-333NGC			183	7.2								

› **Cable Assemblies**

Motor Power	
Pin	Function
1	U
2	V
3	W
4	P.E.
5	Brake
6	Brake
7	N/C
8	N/C
9	N/C



Motor



Motor-Brake



Motor Power Cable Assemblies (1)

Length		Motor	Motor - Brake
ft	m	(4 pins)	(9 pins)
4	1.2	CBL012SP-05TA	CBL012SP-05TB
10	3	CBL030SP-05TA	CBL030SP-05TB
20	6.1	CBL061SP-05TA	CBL061SP-05TB

Encoder Feedback		
Encoder Pin	Function	Micro Flex Pin
1	A+	1
2	A-	9
3	B+	2
4	B-	10
5	Z+	3
6	Z-	11
7	Hall U+	6
8	Hall U-	5
9	Hall V+	8
10	Hall V-	7
11	Hall W+	15
12	Hall W-	14
13	+5 V	12
14	DGnd	13
15	Shield	4
16	N/C	Shell



Encoder



MicroFlex

Encoder Feedback Cable Assemblies (1)

Length		Encoder Feedback
ft	m	(16 pins)
4	1.2	CBL012SF-ETA
10	3	CBL030SF-ETA
20	6.1	CBL061SF-ETA

(1) These cable assemblies will mate to BSM R-Series configuration with bearing type encoder.

Mating Connectors (2)

	Motor Mate	Motor - Brake Mate	Encoder Mate
Housing	206060-1	206708	206037-1
Sockets	66101-4 (4 ea)	66101-4 (4 ea)	66101-4 (15 ea)
	--	66105-4 (2 ea)	--

(2) These Amp/Tyco P/N's are provided as convenience to those wanting to build their own cable assemblies.



Baldor Motion Control At the Heart of Automation

The driving force in today's equipment/machines resides with motion control, and Baldor's motion control products represent the **keys to application solutions** in today's world - flexibility, quality, durability, and reliability.

A Proven Company

In 1920, an electrical engineer and a master machinist began designing and manufacturing some of the highest quality, most energy efficient electric motor in the world. The company's slogan - "**Baldor: A Better Motor**" - expressed the company's philosophy - and this commitment continues even today.

Specify with Confidence

Information - is more valuable than ever, and Baldor will provide you with the tools you need to get the job done.

Quality - our philosophy is to produce the best products available.

Choice - Baldor firmly believes in offering our customers a range of products.

Solutions - being an industry leader, Baldor provides complete solutions

Experience - technical knowledge and application experience enables us to meet and support a wide range of needs

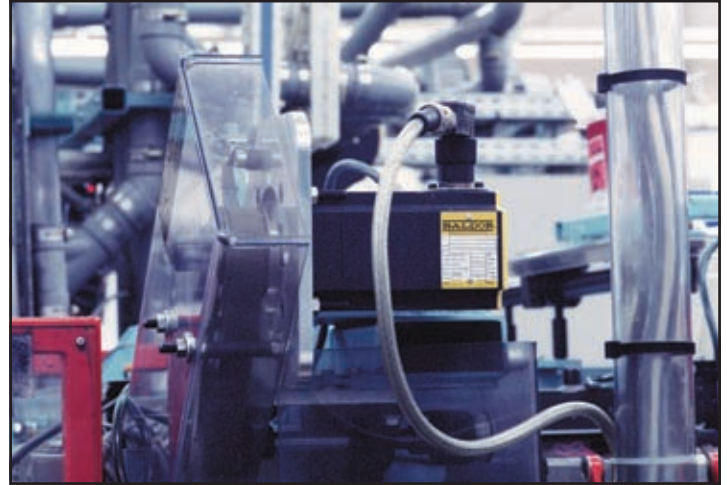
Innovation - Baldor understands the need to stay ahead in product development so that our customers can benefit from product improvements in their fast moving industry.

Leading Edge Motion Technology

Today's automation applications demand increase speed and flexibility to stay ahead. Baldor can provide the **power, flexibility and ease of use** in our range of motion controllers.

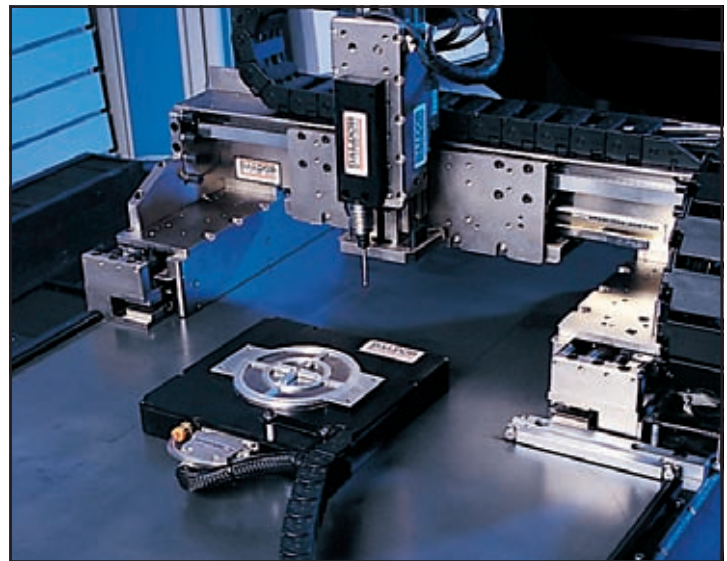
Servo Drives for Today's Equipment

Dynamic **performance and easy of use** is what sets Baldor's drives apart. Whether your needs call for speed or torque control, preset point-to-point moves or fully programmable drives, Baldor has the solution and offers you the choice.



High Performance Servo Motors

Baldor has the design team, the experience, application support, information and solutions to support you. Baldor is a major world-wide provider of high performance rotary and linear **servomotors for automation**.



Baldor's Motion Solutions Catalogs

- BR1202-A** Motion Control Solutions
- BR1202-B** Mint® Software and Applications
- BR1202-C** NextMove Multi-Axis Motion Controllers
- BR1202-D** AC Servo Drives
- BR1202-E** AC Servo Motors
- BR1202-F** DC Servo Motors and Drives
- BR1202-G** Linear Motors and Stages
- BR1202-H** Motion Product Accessories
- BR1202-I** Real-Time Ethernet Motion Solutions
- BR1202-M** MotiFlex Multiaxis Drives

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