

PRODUCT NOTE

IEC stainless steel encapsulated motors

Uncompromised hygiene, reliability and productivity



Sanitary design is the key feature of our stainless steel motors. They are engineered specifically for the food and beverage industry and fulfil all hygienic design principals. This intelligent design enables the food and beverage machinery to be effectively cleaned-in-place (CIP). The smoothly finished surface with laser engraved markings and self-draining design minimizes the risk of micro-organisms proliferating. The bearings are lubricated with H1 food grade grease, ensuring safe operations in food processing environments.

Reliable performance in extreme conditions

Stainless steel is the preferred material for food and beverage processes/operations, it is easy to clean and resistant to rust and corrosion. The IP69 rating provides ultimate protection against high pressure (100 bar) hot water (80°C) sprays at close range. The windings of this motor are fully encapsulated, providing a long lifetime in extreme humid conditions.

Meeting efficiency requirements around the world

The motor is available in IE3 premium efficiency class. The wide coverage of MEPS (Minimum Energy Performance Standards) around the world enables simple sourcing of motors from ABB. Motors are rated for 400V/50Hz and 460V/60Hz.

Ideal for various food processing applications

Our stainless steel motor is a perfect solution for harsh industries like meat, poultry, fish, dairy, beverage and wherever else high food safety is essential. We understand how costly down time is to your bottom line. The features packed into this motor will prevent motor failures in the harshest conditions, improving your productivity by avoiding unwanted interruptions in the process. Downtime for maintenance, cleaning and equipment replacement is minimized. Productivity is maximized.

Contact your local ABB sales office to let us know how we can help in your application or machinery.

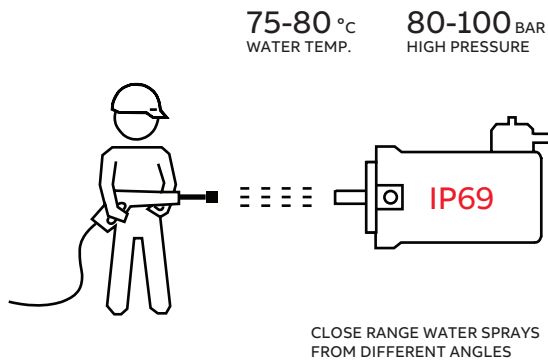
Food safety and reliability	
IP69 protection	Withstands extreme washdown conditions
Encapsulated windings	Long lifetime in extreme humid conditions
H1 food grade grease	Safe operation in food processing environment
TENV cooling (80-90 frames)	Very easy to clean
IE3 efficiency	Lower operating costs and lower surface temperature

Mechanical design

IP69 ingress protection

This classification means that the enclosure will withstand cleaning with high pressure water jets, reducing the risk of damaging the bearings or windings during the cleaning cycle. IP69 is the benchmark for motors used in hygiene areas. Testing for IP69 is performed in accordance with IEC 60529. The motor under test is sprayed from

every practical direction with a spray nozzle at 15-20 cm for a duration of three minutes. The water temperature is 80°C and sprayed at a pressure of 8-10 MPa (80-100 bar) and a flow rate of 14-16 liters / minute. No ingress of water is allowed.



Terminal box

—
01 Terminal box

—
02 Terminal board



01



02

The terminal box is 360° rotatable and is tightened through a central screw. O-rings secure IP69 protection class for the terminal box cover.

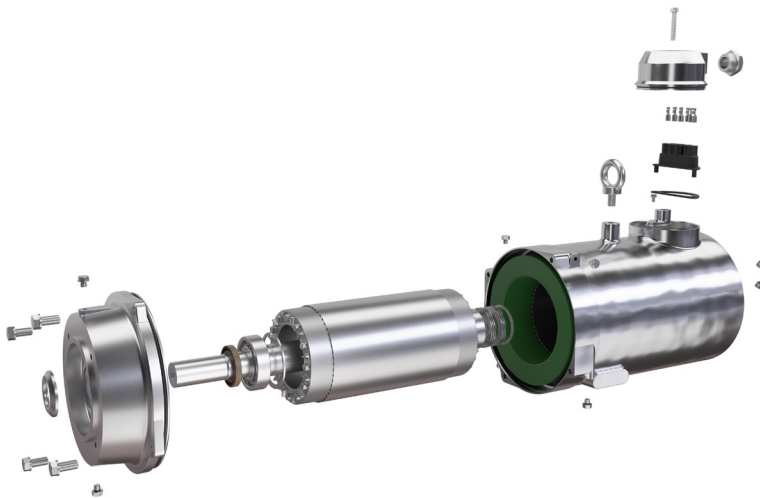
- The terminal box cover is rotatable through a central screw with o-ring to maintain IP69.
- The central screw can be unscrewed making it possible to rotate the box 360 degree.
- By default the terminal box has M25 x 1.5 threaded hole.
- Refer to instruction manual (3GZF500930-876) for recommended cable glands to maintain IP69
- Terminal boards: Universal and quick internal connection system.
- Internal M4 grounding bolt on the top of the motor inside the terminal box cover.
- Power cable needs 6 conductors, 3 ph, 1 ground, 2 thermal sensors.

Motors in brief

IEC Food Safe stainless steel motors

Size	M3MA 71	80	90	100	112	132
Stator frame, shaft	Material	Stainless steel AISI 304				
Bearings	D-end	6204/2Z/C3	6205-2T/C3	6205-2Z/C3	6206-2Z/C3	6208-2Z/C3
	N-end	6203-2Z/C3	6203-2Z/C3	6204/2Z/C3	6205-2Z/C3	6208-2Z/C3
		Heat stabilized bearings, withstand wide temperature range -20°C to +150°C				
Axially locked bearings	Retaining ring	Locked at D-end				
Bearing seals	D- and N-end	Seal on D-end, Gamma-ring externally and radial seal internally				
Lubrication		Permanently lubricated shielded bearing with H1 grease				
Measuring nipples for conditioning monitoring		Not included				
Fan		No fan			Nylon	
Cooling		TENV / IC410			TEFC / IC411	
Rating plate		Laser etched onto the frame				
Terminal box	Material	Stainless steel AISI 304				
Connections		Suitable for M25 x 1.5 IP69 cable gland				
Stator winding		Encapsulated winding with epoxy resin				
Rotor	Material	Die-cast alumin				
Balancing method		Half-key balancing				
Keyway		Closed keyway				
Lifting lugs		No			Removable lifting lug kit included	
Drain holes		Drain holes closed upon high pressure water clearing, plugged with stainless steel screws				
Enclosure		IP 69				

Designed for ultimate reliability in extreme conditions



- Heat stabilized bearings with H1 food grade grease
- Windings encapsulated with epoxy resin - environmental protection against water and humidity
- Rotatable terminal box cover allows for cable exit in any direction
- Suitable for cable gland and various types of IP69 connectors
- Integrated drain channels guarantee effective and easy cleaning
- Squirrel cage rotor technology for IE3 efficiency
- Stainless steel AISI 304 frame and hygienic design
- Water drain holes suitable for horizontal and vertical mounting

Technical data

IEC Stainless steel encapsulated motors 400VY, 50Hz/460VY, 60Hz

kw//HP	Speed RPM	Cooling Method	IEC Frame	US ABB Catalog Number	ABB Product Code	ABB Type Number	Full load efficiency at 460V, 60 Hz	Current I _a , Full Load Amps	Overall Length inches	Approx. Weight LBS
B3 Foot Mounted										
0.18 // 0.24	1200	IC410/TENV	71	SSEWDM07186-B	3GMA 073 310-ASB	M3MA 71MA 6	67.5	0.55	12.20	33
	1800	IC410/TENV	71	SSEWDM07254-B	3GMA 072 320-ASB	M3MA 71MB 4	73.4	0.56	12.20	44
0.25 // 0.33	1200	IC410/TENV	71	SSEWDM07256-B	3GMA 073 320-ASB	M3MA 71MB 6	71.4	0.67	12.20	35
	1800	IC410/TENV	80	SSEWDM08374-B	3GMA 082 310-ASB	M3MA 80MA 4	81.6	0.9	13.94	51
0.37 // 0.5	1200	IC410/TENV	80	SSEWDM08376-B	3GMA 083 310-ASB	M3MA 80MA 6	79.2	1.05	13.94	51
	3600	IC410/TENV	80	SSEWDM08552-B	3GMA 081 310-ASB	M3MA 80MA 2	80.8	0.97	13.94	51
0.55 // 0.73	1800	IC410/TENV	80	SSEWDM08554-B	3GMA 082 320-ASB	M3MA 80MB 4	83.9	1.08	13.94	51
	1200	IC410/TENV	90	SSEWDM09556-B	3GMA 093 310-ASB	M3MA 90MA 6	81.7	1.46	17.15	106
0.75 // 1	3600	IC410/TENV	80	SSEWDM08752-B	3GMA 081 320-ASB	M3MA 80MB 2	77.0	1.28	13.94	51
	1800	IC410/TENV	80	SSEWDM08754-B	3GMA 082 330-ASB	M3MA 80MC 4	85.5	1.58	13.94	51
1.1 // 1.5	1200	IC410/TENV	90	SSEWDM09756-B	3GMA 093 320-ASB	M3MA 90MB 6	82.5	1.85	17.15	115
	3600	IC410/TENV	80	SSEWDM08112-B	3GMA 081 330-ASB	M3MA 80MC 2	84.0	1.84	13.94	w51
1.5 // 2	1800	IC410/TENV	90	SSEWDM09114-B	3GMA 092 310-ASB	M3MA 90MA 4	86.5	1.98	17.15	106
	3600	IC410/TENV	90	SSEWDM09152-B	3GMA 091 310-ASB	M3MA 90MA 2	85.5	2.71	17.15	115
1.5 // 2	1800	IC410/TENV	90	SSEWDM09154-B	3GMA 092 320-ASB	M3MA 90MB 4	86.5	2.51	17.15	115
	1200	IC411/TEFC	100	SSEWDM10156-B	3GMA 103 510-ASB	M3MA 100LA 6	88.5	3.38	18.92	128
2.2 // 3	3600	IC410/TENV	90	SSEWDM09222-B	3GMA 091 320-ASB	M3MA 90MA 2	86.5	3.53	17.15	115
	1800	IC411/TEFC	100	SSEWDM10224-B	3GMA 102 510-ASB	M3MA 100LA 4	89.5	4.76	18.92	126
3 // 4	3600	IC411/TEFC	100	SSEWDM10032-B	3GMA 101 510-ASB	M3MA 100LA 2	88.5	4.69	18.92	133
	1800	IC411/TEFC	100	SSEWDM10034-B	3GMA 102 520-ASB	M3MA 100LB 4	89.5	6.43	18.92	126
3 // 4	1200	IC411/TEFC	132	SSEWDM13036-B	3GMA 133 510-ASB	M3MA 132LA 6	89.5	6.6	22.81	148
	3600	IC411/TEFC	112	SSEWDM11042-B	3GMA 111 510-ASB	M3MA 112MA 2	88.5	6.1	18.92	134
4 // 5	1800	IC411/TEFC	112	SSEWDM11044-B	3GMA 112 510-ASB	M3MA 112LA 4	89.5	7.3	18.92	134
	1200	IC411/TEFC	132	SSEWDM13046-B	3GMA 133 520-ASB	M3MA 132LB 6	89.5	8.2	22.81	148
5.5 // 7.3	3600	IC411/TEFC	132	SSEWDM13552-B	3GMA 131 510-ASB	M3MA 132LA 2	89.5	9.8	22.81	152
	1800	IC411/TEFC	132	SSEWDM13554-B	3GMA 132 510-ASB	M3MA 132LA 4	91.7	10.8	22.81	161
7.5 // 10	3600	IC411/TEFC	132	SSEWDM13752-B	3GMA 131 520-ASB	M3MA 132LB 2	90.2	12.7	22.81	165
	1800	IC411/TEFC	132	SSEWDM13754-B	3GMA 132 520-ASB	M3MA 132LB 4	91.7	14.4	22.81	181
B5 Flange Mounted										
0.18 // 0.24	1200	IC410/TENV	71	SSEWDM07186D-B	3GMA 073 310-BSB	M3MA 71MA 6	67.5	0.55	12.20	33
	1800	IC410/TENV	71	SSEWDM07254D-B	3GMA 072 320-BSB	M3MA 71MB 4	73.4	0.56	12.20	44
0.25 // 0.33	1200	IC410/TENV	71	SSEWDM07256D-B	3GMA 073 320-BSB	M3MA 71MB 6	71.4	0.67	12.20	35
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0.55 // 0.73	1800	IC410/TENV	80	SSEWDM08554D-B	3GMA 082 320-BSB	M3MA 80MB 4	83.9	1.08	13.94	51
	1200	IC410/TENV	90	SSEWDM09556D-B	3GMA 093 310-BSB	M3MA 90MA 6	81.7	1.46	17.15	106
0.75 // 1	3600	IC410/TENV	80	SSEWDM08752D-B	3GMA 081 320-BSB	M3MA 80MB 2	77.0	1.28	13.94	51
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	3600	IC410/TENV	80	SSEWDM08112D-B	3GMA 081 330-BSB	M3MA 80MC 2	84.0	1.84	13.94	51
1.5 // 2	1800	IC410/TENV	90	SSEWDM09114D-B	3GMA 092 310-BSB	M3MA 90MA 4	86.5	1.98	17.15	106
	3600	IC410/TENV	90	SSEWDM09152D-B	3GMA 091 310-BSB	M3MA 90MA 2	85.5	2.71	17.15	115
1.5 // 2	1800	IC410/TENV	90	SSEWDM09154D-B	3GMA 092 320-BSB	M3MA 90MB 4	86.5	2.51	17.15	115
	1200	IC411/TEFC	100	SSEWDM10156D-B	3GMA 103 510-BSB	M3MA 100LA 6	88.5	3.38	18.92	128
2.2 // 3	3600	IC410/TENV	90	SSEWDM09222D-B	3GMA 091 320-BSB	M3MA 90MA 2	86.5	3.53	17.15	115
	1800	IC411/TEFC	100	SSEWDM10224D-B	3GMA 102 510-BSB	M3MA 100LA 4	89.5	4.76	18.92	126

Please refer to complete technical catalog 9AKK107368 EN 04-2019 for full technical data including efficiencies at 400VY, 50Hz

Technical data

IEC Stainless steel encapsulated motors 400VY, 50Hz/460VY, 60Hz

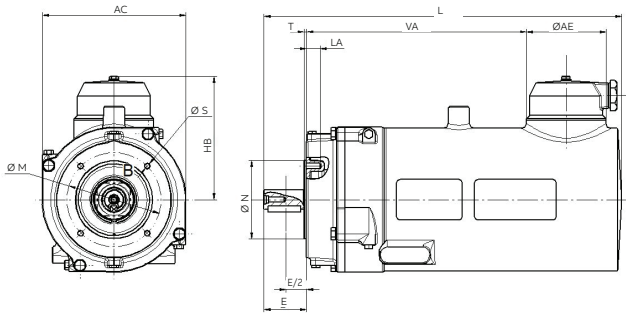
kw//HP	Speed RPM	Cooling Method	IEC Frame	US ABB Catalog Number	ABB Product Code	ABB Type Number	Full load efficiency at 460V, 60 Hz	Current I _a , A Full Load Amps	Overall Length inches	Approx. Weight LBS
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B14 Flange Mounted										
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3 // 4	3600	IC411/TEFC	100	SSEWDM10032C-B	3GMA 101 510-CSB	M3MA 100LA 2	88.5	4.69	18.92	133
	1800	IC411/TEFC	100	SSEWDM10034C-B	3GMA 102 520-CSB	M3MA 100LB 4	89.5	6.43	18.92	126
	1200	IC411/TEFC	132	SSEWDM13036C-B	3GMA 133 510-CSB	M3MA 132LA 6	89.5	6.6	22.81	148
4 // 5	3600	IC411/TEFC	112	SSEWDM11042C-B	3GMA 111 510-CSB	M3MA 112MA 2	88.5	6.1	18.92	134
	1800	IC411/TEFC	112	SSEWDM11044C-B	3GMA 112 510-CSB	M3MA 112LA 4	89.5	7.3	18.92	134
	1200	IC411/TEFC	132	SSEWDM13046C-B	3GMA 133 520-CSB	M3MA 132LB 6	89.5	8.2	22.81	148
5.5 // 7.3	3600	IC411/TEFC	132	SSEWDM13552C-B	3GMA 131 510-CSB	M3MA 132LA 2	89.5	9.8	22.81	152
	1800	IC411/TEFC	132	SSEWDM13554C-B	3GMA 132 510-CSB	M3MA 132LA 4	91.7	10.8	22.81	161
7.5 // 10	3600	IC411/TEFC	132	SSEWDM13752C-B	3GMA 131 520-CSB	M3MA 132LB 2	90.2	12.7	22.81	165
	1800	IC411/TEFC	132	SSEWDM13754C-B	3GMA 132 520-CSB	M3MA 132LB 4	91.7	14.4	22.81	181

Please refer to complete technical catalog 9AKK107368 EN 04-2019 for full technical data including efficiencies at 400VY, 50Hz

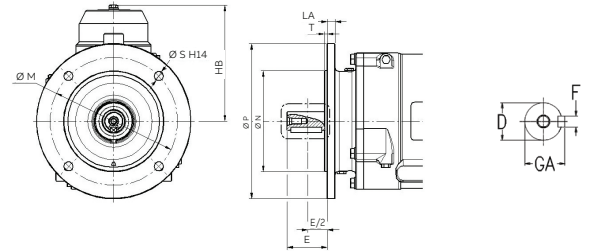
Dimension drawing

IEC Food Safe stainless steel motors, sizes 71-90

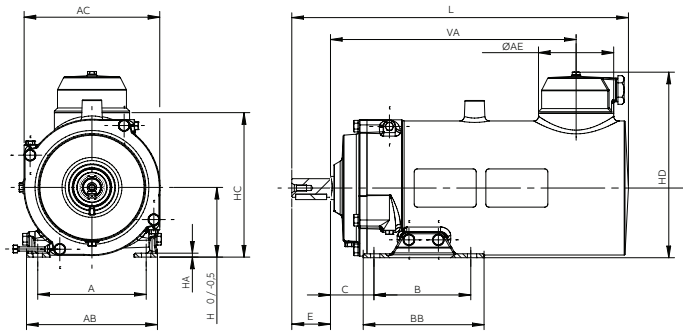
Flange-mounted B14



Flange-mounted B5



Foot-mounted B3



Motor size	A	AB	AC	Ø AE	B	BB	C	Ø D	DB	E	EG	F	G	GA	H	HB	HC	HD	L	VA
71	112	145	131	97	90	121	45	14	M5	30	12,5	5	11	16	71	131	149	202	310	213
80	125	155	156	97	100	131	50	19	M6	40	16	6	15,5	21,5	80	140	167	220	354	247
90	140	169	176	97	125	156	56	24	M8	50	19	8	20	27	90	149,5	187	240	434,5	317

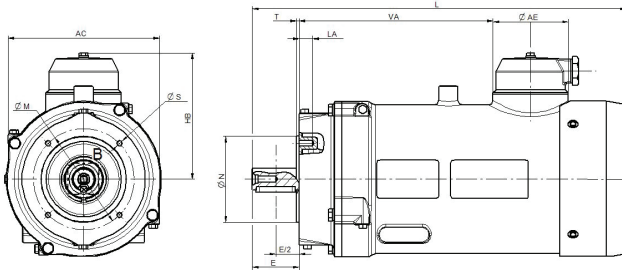
Motor size	Flange-mounted B5					Flange-mounted B14				
	M	N	P	S	T	M	N	P	S	T
71	130	110	160	10	3,5	85	70	99	M6	2,5
80	165	130	200	12	3,5	100	80	120	M6	3
90	165	130	200	12	3,5	115	95	140	M8	3

All dimensions are in mm.

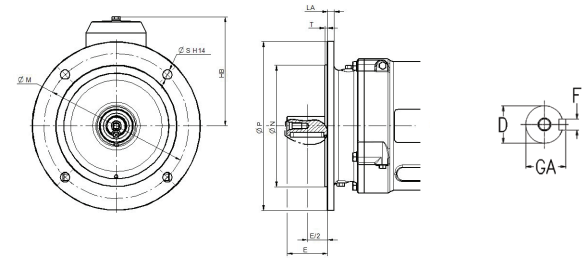
Dimension drawing

IEC Food Safe stainless steel motors, sizes 100-132

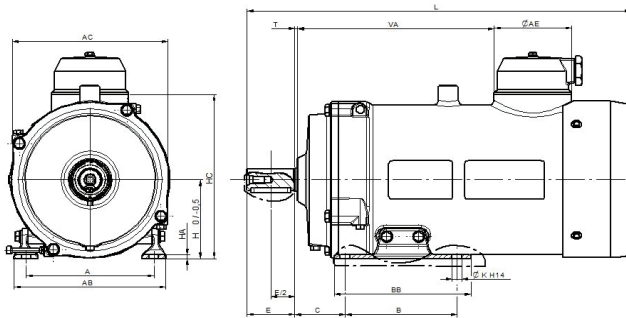
Flange-mounted B14



Flange-mounted B5



Foot-mounted B3





Motor size	A	AB	AC	Ø AE	B	BB	C	Ø D	DB	E	EG	F	G	GA	H	HB	HC	HD	L	VA
100	194,5	190	194,5	97	140	171	63	28	M10	60	22	8	24	31	100	161	208	261	480,5	298
112	194,5	220	194,5	97	140	190	70	28	M10	60	22	8	24	31	112	161	220	273	480,5	298
132	216	241	234	97	203	233	89	38	M12	80	28	10	33	41	132	181	260	313	579,5	370

Motor size	Flange-mounted B5					Flange-mounted B14				
	M	N	P	S	T	M	N	P	S	T
100	130	180	250	14,5	4	130	110	159	M8	3,5
112	165	180	250	14,5	4	130	110	159	M8	3,5
132	165	230	300	14,5	4	165	130	193	M10	3,5

All dimensions are in mm.

Food and beverage offering Zone 1

Motors, gearing and bearings

Product	Food zone 1		
	Ideal for meat and poultry processing, dairy and other equipment that are in direct contact with food products		
IEC Motors	IEC Food safe motors	NEMA motors	NEMA Food safe motors
			
Gearing	Ultra Kleen Stainless Quantis Ultra Kleen Stainless Tigear®-2	Mounted bearings	Ultra Kleen® all stainless bearing in stainless or polymer housing
			

Contact your local ABB sales office to request additional literature including:
 3AXD50000377497 Meat and Poultry Brochure,
 3AXD50000377626 Sugar Production Brochure,
 3AXD50000377480 Dairy Production Brochure,
 3AUA0000230544 Bakery Production Brochure

ABB Motors and Mechanical Inc.
 5711 RS Boreham Jr Street
 Fort Smith, AR 72901
 479.646.4711

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baldor.abb.com

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