Flameproof motors Ex d IIB/IIC T4 Gb

Totally enclosed squirrel cage three phase low voltage motors, Sizes 80 to 450, 0.55 to 710 kW

Ordering information

When placing an order, specify motor type, size and product code according to the following example.

Example	
Motor type	M3JP 160 MLA
Pole number	2
Mounting arrangement (IM-code)	IM B3 (IM 1001)
Rated output	11 kW
Product code	3GJP161410-ADH
Variant codes if needed	

Explanation of the product code

Motor type	Motor size	Product code	Mounting arrangement code, Voltage and frequency code, Generation code	Variant codes
M3JP	160MLA	3GJP 161	410 - ADH	002, etc.
		1 2 3 4	5 6 7 8 9 10 11 12 13 14	

Positions 1 - 4

3GJP:	Totally enclosed frameproof motor E xd with cast iron frame

Positions 5 and 6

IEC size

08:	80
09:	90
10:	100
11:	112
13:	132
16:	160
18:	180
20:	200
22:	225
25:	250
28:	280
31:	315
35:	355
40:	400
45:	450

Position 7

Speed (Pole pairs)

1:	2 poles
2:	4 poles
3:	6 poles
4:	8 poles
5:	10 poles
6:	12 poles
7:	≥ 12 poles
8:	Two-speed motors
9:	Multi-speed motors

Positions 8 to 10

Serial number

Position 11

- (Dash)

Position 12

Mounting arrangement

A:	Foot-mounted, top-mounted terminal box
R:	Foot-mounted, terminal box RHS seen from D-end
L:	Foot-mounted, terminal box LHS seen from D-end
B:	Flange-mounted, large flange with clearance holes
C:	Flange-mounted, small flange with tapped holes
V:	Flange-mounted, special flange
H:	Foot/flange-mounted, large flange with clearance holes
J:	Foot/flange-mounted, small flange with tapped holes
S:	Foot/flange-mounted, terminal box RHS seen from D-end
T:	Foot/flange-mounted, terminal box LHS seen from D-end
F:	Foot/flange-mounted, special flange

Position 13

Voltage and frequency

Single-speed motors

B:	380 VΔ 50 Hz
D:	400 VΔ, 415 VΔ, 690 VY 50 Hz
E:	500 VΔ 50 Hz
F:	500 VY 50 Hz
S:	230 VΔ, 400 VY, 415 VY 50 Hz
T:	660 VΔ 50 Hz
U:	690 VΔ 50 Hz
X:	Other rated voltage, connection or frequency, 690 V maximum

Position 14

Generation code **G/H**

Generation code is followed by variant codes according to the hazardous area, seen below and on corresponding pages with variant codes:

461	Ex d(e) design, Group IIC

The two bullets in the product code indicate choice of mounting arrangements, voltage and frequency code.

Efficiency values are given according to IEC 60034-2-1;2014.

Rating plates

The rating plates are in table form giving values for speed, current and power factor for three voltages: 400V-415V-690V as standard. Other voltage and frequency combinations are possible and can be ordered with variant codes 002 or 209. Please see Variant code section.

The following information will be shown on the motor rating plate:

- Lowest nominal efficiency at 100 %, 75 % and 50 % rated load
- Efficiency level
- Year of manufacture
- Type of protection
- Apparatus group
- Temperature class
- Identification number of the certification body
- Certificate number (both ATEX and IECEx are stamped on the rating plate as standard)

Motor sizes 80 to 450

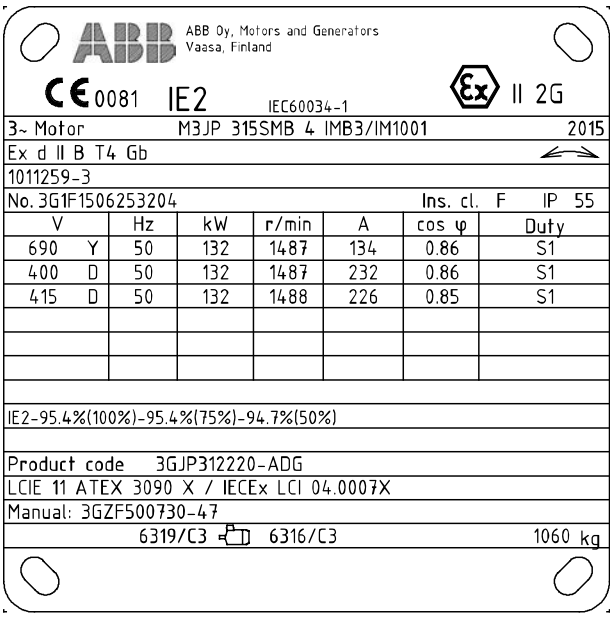


ABB Oy, Motors and Generators
Vaasa, Finland

CE 0081 IE2 IEC60034-1 Ex II 2G

3~ Motor M3JP 315SMB 4 IMB3/IM1001 2015

Ex d II B T4 Gb

1011259-3

No. 3G1F1506253204 Ins. cl. F IP 55

V		Hz	kW	r/min	A	cos φ	Duty
690	Y	50	132	1487	134	0.86	S1
400	D	50	132	1487	232	0.86	S1
415	D	50	132	1488	226	0.85	S1

IE2-95.4%(100%)-95.4%(75%)-94.7%(50%)

Product code 3GJP312220-ADG

LCIE 11 ATEX 3090 X / IECEx LCI 04.0007X

Manual: 3GZF500730-47

6319/C3 6316/C3 1060 kg

M000737

Technical data for Ex d IIB/IIC T4 Gb
Flameproof IE2 cast iron motors

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency Full load 100%	Efficiency 3/4 load 75%	Efficiency 1/2 load 50%	Power factor cosphi	Current I_N A	Current $\frac{I_s}{I_N}$	Torque T_N N_m	Torque $\frac{T_l}{T_N}$	Torque $\frac{T_b}{T_N}$	Moment of inertia J=1/4 GD² kgm²	Weight kg	Sound pressure level L_{PA} dB
3000 r/min = 2 poles				400 V 50 Hz				CENELEC-design							
0.75	M3JP 80MA 2	3GJP081310-••H	2877	80.7	80.2	76.5	0.85	1.54	7.1	2.4	4.0	4.6	0.0006	37	59
1.1	M3JP 80MB 2	3GJP081320-••H	2831	81.6	82.3	80.5	0.87	2.26	6.2	3.7	2.6	3.3	0.0007	39	59
1.5	M3JP 90SLA 2	3GJP091010-••H	2881	82.0	82.2	79.9	0.88	3.0	6.7	4.9	3.0	3.5	0.001	50	61
2.2	M3JP 90SLC 2	3GJP091030-••H	2877	83.7	84.3	83.0	0.89	4.2	7.8	7.3	2.7	3.5	0.0014	53	61
3	M3JP 100LA 2	3GJP101510-••H	2896	86.0	86.5	84.8	0.90	5.7	6.6	9.9	2.0	2.6	0.0036	70	65
4	M3JP 112MB 2	3GJP111320-••H	2891	86.0	87.0	87.0	0.89	7.59	6.9	13.2	2.0	3.0	0.0043	73	65
5.5	M3JP 132SMB 2	3GJP131220-••H	2905	87.0	86.4	84.4	0.89	10.5	6.8	17.99	2.6	3.4	0.009	101	71
7.5	M3JP 132SMD 2	3GJP131240-••H	2914	89.2	89.7	88.7	0.90	13.7	7.5	24.6	3.3	3.6	0.012	109	71
11	M3JP 160MLA 2	3GJP161410-••H	2931	90.1	90.4	89.3	0.89	20.2	6.7	35.81	2.5	3.2	0.043	213	71
15	M3JP 160MLB 2	3GJP161420-••H	2929	91.2	91.7	90.8	0.89	27.0	7.2	48.9	2.9	3.4	0.052	222	71
18.5	M3JP 160MLC 2	3GJP161430-••H	2934	91.6	92.4	92.3	0.90	32.4	7.4	60.3	3.1	3.5	0.062	233	69
22	M3JP 180MLA 2	3GJP181410-••H	2938	91.7	92.3	91.8	0.90	39.1	7.0	71.4	2.5	3.2	0.089	265	69
30	M3JP 200MLA 2	3GJP201410-••G	2956	93.2	93.6	93.0	0.88	52.7	7.4	96.9	3.0	3.2	0.15	310	74
37	M3JP 200MLC 2	3GJP201430-••G	2954	93.6	94.0	93.4	0.89	64.7	7.5	119.9	2.8	3.2	0.19	340	75
45	M3JP 225SMB 2	3GJP221220-••G	2968	93.8	93.9	93.0	0.87	78.8	7.2	144	2.7	3.0	0.26	400	76
55	M3JP 250SMA 2	3GJP251210-••G	2975	94.3	94.2	93.2	0.89	95.1	7.8	176	2.4	3.1	0.49	460	75
75 [1]	M3JP 280SMA 2	3GJP281210-••G	2977	94.3	93.8	92.2	0.88	131	7.6	240	2.1	3.0	0.8	625	77
90 [1]	M3JP 280SMB 2	3GJP281220-••G	2976	94.6	94.7	93.8	0.89	154	7.4	288	2.1	2.9	0.9	665	77
110 [1]	M3JP 315SMA 2	3GJP311210-••G	2982	94.9	94.4	92.9	0.86	197	7.4	352	2.2	3.2	1.2	980	78
132 [1]	M3JP 315SMB 2	3GJP311220-••G	2982	95.1	94.8	93.6	0.88	227	7.4	422	2.2	3.0	1.4	940	78
160 [1]	M3JP 315SMC 2	3GJP311230-••G	2981	95.4	95.2	94.2	0.89	271	7.5	512	2.3	3.0	1.7	1025	78
200 [1]	M3JP 315MLA 2	3GJP311410-••G	2980	95.7	95.7	94.9	0.90	335	7.7	640	2.6	3.0	2.1	1190	78
250 [1]	M3JP 355SMA 2	3GJP351210-••G	2984	95.7	95.5	94.5	0.89	423	7.7	800	2.1	3.3	3.0	1600	83
315 [1]	M3JP 355SMB 2	3GJP351220-••G	2980	95.7	95.6	95.0	0.89	531	7.0	1009	2.1	3.0	3.4	1680	83
355 [1]	M3JP 355SMC 2	3GJP351230-••G	2984	95.7	95.7	94.9	0.88	603	7.2	1136	2.2	3.0	3.6	1940	83
400 [1]	M3JP 355MLA 2	3GJP351410-••G	2982	96.9	96.6	95.9	0.88	677	7.1	1280	2.3	2.9	4.1	2190	83
450 [1]	M3JP 355MLB 2	3GJP351420-••G	2983	97.1	97.0	96.4	0.90	743	7.9	1440	2.2	2.9	4.3	2270	83
500 [1]	M3JP 355LKA 2	3GJP351810-••G	2982	96.9	96.9	96.5	0.90	827	7.5	1601	2.0	3.9	4.8	2510	83
560 [3]	M3JP 400LA 2	3GJP401510-••G	2988	97.2	97.2	96.6	0.89	934	7.8	1789	2.5	3.7	7.9	3230	82
560 [3]	M3JP 400LKA 2	3GJP401810-••G	2988	97.2	97.2	96.6	0.89	934	7.8	1789	2.5	3.7	7.9	3230	82
630 [3]	M3JP 400LB 2	3GJP401520-••G	2987	97.4	97.2	96.7	0.89	1049	7.6	2014	2.6	3.7	8.2	3330	82
630 [3]	M3JP 400LKB 2	3GJP401820-••G	2987	97.4	97.2	96.7	0.89	1049	7.6	2014	2.6	3.7	8.2	3330	82
710 [3]	M3JP 400LC 2	3GJP401530-••G	2987	97.5	97.4	96.9	0.89	1178	7.2	2270	2.6	3.4	9.3	3580	82
710 [3]	M3JP 400LKC 2	3GJP401830-••G	2987	97.5	97.4	96.9	0.89	1178	7.2	2270	2.6	3.4	9.3	3580	82
3000 r/min = 2 poles				400 V 50 Hz				High-output design							
9.2 [2]	M3JP 132SME 2	3GJP131250-••H	2875	86.9	88.2	87.9	0.91	16.9	6.0	30.6	2.6	2.9	0.012	109	71
22 [2]	M3JP 160MLD 2	3GJP161440-••H	2929	91.2	91.9	91.4	0.90	38.3	7.5	71.7	3.1	3.3	0.07	239	77
30	M3JP 180MLB 2	3GJP181420-••H	2943	92.5	93.2	92.6	0.90	52.2	7.1	97.23	2.3	3.2	0.13	298	78
37	M3JP 180MLC 2	3GJP181430-••H	2950	92.8	93.1	92.8	0.90	64.9	8.1	119.9	3.3	3.7	0.13	298	77
45	M3JP 200MLE 2	3GJP201450-••G	2945	93.3	93.5	93.1	0.88	79.4	7.3	146	2.9	3.1	0.22	345	79
55	M3JP 225SMC 2	3GJP221230-••G	2965	93.9	94.2	93.5	0.88	95.8	7.1	177	2.6	3.0	0.29	420	80
67 [4]	M3JP 225SMD 2	3GJP221240-••G	2966	93.9	93.9	93.0	0.86	120	7.4	215	2.8	3.2	0.31	430	78
75	M3JP 250SMB 2	3GJP251220-••G	2969	93.8	93.9	93.2	0.89	129	7.9	241	2.6	3.1	0.57	500	80
90 [4]	M3JP 250SMC 2	3GJP251230-••G	2965	94.4	94.5	93.9	0.89	153	7.7	289	2.5	3.0	0.59	510	80
110 [1]	M3JP 280SMC 2	3GJP281230-••G	2978	95.1	95.1	94.5	0.90	186	7.9	352	2.4	3.0	1.15	725	77

[1] 3dB(A) sound pressure level reduction with unidirectional fan construction. Direction of rotation must be stated when ordering, see variant codes 044 and 045
[2] Efficiency class IE1
[3] Unidirectional fan construction as standard. Direction of rotation must be stated when ordering, see variant codes 044 and 045
[4] For 400-415 V 50 Hz (380 V 50 Hz voltage code B)

Technical data for Ex d IIB/IIC T4 Gb
Flameproof IE2 cast iron motors

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency Full load 100%	Efficiency 3/4 load 75%	Efficiency 1/2 load 50%	Power factor cosphi	Current I_N A	Current $\frac{I_s}{I_N}$	Torque T_N N_m	Torque $\frac{T_l}{T_N}$	Torque $\frac{T_b}{T_N}$	Moment of inertia J=1/4 GD² kgm²	Weight kg	Sound pressure level L_{PA} dB
1500 r/min = 4 poles				400 V 50 Hz				CENELEC-design							
0.55 [2]	M3JP 80MA 4	3GJP082310-••H	1421	76.6	76.9	74.1	0.73	1.49	4.7	3.7	2.2	2.7	0.001	38	59
0.75	M3JP 80MB 4	3GJP082320-••H	1416	80.2	80.1	77.5	0.75	1.87	5.4	5.0	2.7	3.1	0.0012	40	59
1.1	M3JP 90SLA 4	3GJP092010-••H	1432	82.2	82.1	79.6	0.77	2.5	6.5	7.3	3.0	3.5	0.002	51	54
1.5	M3JP 90SLC 4	3GJP092030-••H	1431	83.2	83.6	81.9	0.78	3.3	6.6	10.0	3.3	3.7	0.003	53	54
2.2	M3JP 100LA 4	3GJP102510-••H	1437	85.5	86.5	85.8	0.84	4.4	5.9	14.6	2.3	3.0	0.0075	70	52
3	M3JP 100LB 4	3GJP102520-••H	1444	86.5	87.5	86.8	0.83	6.1	6.4	19.9	2.7	3.4	0.0081	72	59
4	M3JP 112MC 4	3GJP112330-••H	1458	88.2	87.7	85.4	0.78	8.6	9.2	26.3	3.4	4.9	0.013	81	61
5.5	M3JP 132SMB 4	3GJP132220-••H	1458	89.5	89.2	87.3	0.80	11.7	7.9	36.0	3.7	3.8	0.023	111	60
7.5	M3JP 132SMD 4	3GJP132240-••H	1460	89.2	89.0	87.3	0.76	16.7	8.4	49.2	4.0	3.9	0.034	114	60
11	M3JP 160MLC 4	3GJP162430-••H	1470	91.2	91.3	90.0	0.82	21.5	8.0	71.5	3.3	3.8	0.096	232	62
15	M3JP 160MLE 4	3GJP162450-••H	1467	92.0	92.3	91.8	0.84	28.5	8.0	97.7	3.3	3.2	0.13	255	61
18.5	M3JP 180MLA 4	3GJP182410-••H	1474	91.6	92.1	91.5	0.83	35.7	7.2	120	2.6	3.1	0.19	277	62
22	M3JP 180MLB 4	3GJP182420-••H	1474	92.2	92.5	91.9	0.82	42.0	7.7	142	2.8	3.4	0.23	296	62
30	M3JP 200MLB 4	3GJP202420-••G	1471	92.5	93.2	93.1	0.84	55.0	7.4	194	3.0	2.8	0.34	340	61
37	M3JP 225SMB 4	3GJP222220-••G	1480	93.6	93.9	93.4	0.85	69.0	7.6	239	3.2	2.9	0.42	390	67
45	M3JP 225SMC 4	3GJP222230-••G	1477	94.1	94.4	94.3	0.86	78.4	7.6	291	3.2	2.7	0.49	425	67
55	M3JP 250SMA 4	3GJP252210-••G	1479	94.7	94.7	94.1	0.84	100	7.2	355	2.5	3.1	0.72	415	66
75	M3JP 280SMA 4	3GJP282210-••G	1484	94.5	94.7	94.4	0.85	134	6.9	482	2.5	2.8	1.25	625	68
90	M3JP 280SMB 4	3GJP282220-••G	1483	94.7	95.0	94.5	0.85	160	7.2	579	2.5	2.7	1.5	765	68
110	M3JP 315SMA 4	3GJP312210-••G	1487	95.1	95.1	94.3	0.86	194	7.2	706	2.3	2.8	2.3	900	70
132	M3JP 315SMB 4	3GJP312220-••G	1487	95.4	95.4	94.7	0.86	232	7.1	847	2.3	2.7	2.6	960	70
160	M3JP 315SMC 4	3GJP312230-••G	1487	95.3	95.3	94.8	0.85	284	7.2	1027	2.4	2.9	2.9	1000	70
200	M3JP 315MLA 4	3GJP312410-••G	1486	95.6	95.6	95.3	0.86	351	7.2	1285	2.5	2.9	3.5	1160	70
250	M3JP 355SMA 4	3GJP352210-••G	1488	95.9	96.0	95.5	0.85	442	7.1	1604	2.3	2.7	5.9	1610	74
315	M3JP 355SMB 4	3GJP352220-••G	1488	95.9	96.2	95.8	0.86	550	7.3	2021	2.3	2.8	6.9	1780	74
355	M3JP 355SMC 4	3GJP352230-••G	1487	95.9	96.2	95.9	0.87	614	6.8	2279	2.4	2.7	7.2	2010	78
400	M3JP 355MLA 4	3GJP352410-••G	1489	96.3	96.3	95.9	0.85	705	6.8	2565	2.3	2.6	8.4	2330	78
450	M3JP 355MLB 4	3GJP352420-••G	1490	96.7	96.7	96.1	0.86	780	6.9	2884	2.3	2.9	8.4	2330	78
500	M3JP 355LKA 4	3GJP352810-••G	1490	97.0	97.0	96.5	0.86	865	6.8	3204	2.0	3.0	10	2690	78
560	M3JP 400LA 4	3GJP402510-••G	1491	96.8	96.8	96.3	0.85	982	7.4	3586	2.4	2.8	15	3200	78
560	M3JP 400LKA 4	3GJP402810-••G	1491	96.8	96.8	96.3	0.85	982	7.4	3586	2.4	2.8	15	3200	78
630	M3JP 400LB 4	3GJP402520-••G	1491	97.0	97.0	96.5	0.87	1077	7.6	4034	2.2	2.9	16	3580	78
630	M3JP 400LKB 4	3GJP402820-••G	1491	97.0	97.0	96.5	0.87	1077	7.6	4034	2.2	2.9	16	3580	78
710 [1]	M3JP 400LC 4	3GJP402530-••G	1491	97.1	97.1	96.7	0.86	1227	7.6	4547	2.4	3.0	17	3680	78
710 [1]	M3JP 400LKC 4	3GJP402830-••G	1491	97.1	97.1	96.7	0.86	1227	7.6	4547	2.4	3.0	17	3680	78
1500 r/min = 4 poles				400 V 50 Hz				High-output design							
9.2 [2]	M3JP 132SME 4	3GJP132250-••H	1446	88.4	89.2	88.1	0.80	18.7	6.0	60.7	2.7	3.0	0.034	114	60
18.5	M3JP 160MLF 4	3GJP162460-••H	1469	91.8	92.2	91.6	0.84	35.0	8.2	120	3.5	3.8	0.13	255	68
22 [2]	M3JP 160MLG 4	3GJP162470-••H	1466	90.8	91.1	90.3	0.81	43.9	8.3	143	2.9	3.9	0.13	255	68
30 [2]	M3JP 180MLC 4	3GJP182430-••H	1466	92.1	92.4	91.8	0.81	59.6	7.6	195	2.2	3.3	0.248	304	66
37	M3JP 200MLC 4	3GJP202430-••G	1475	93.0	93.1	92.4	0.82	70.5	7.5	239	3.5	3.2	0.34	340	73
55	M3JP 225SMD 4	3GJP222240-••G	1483	94.3	94.4	93.9	0.83	101	7.4	354	3.4	2.9	0.55	445	68
60 [2]	M3JP 225SME 4	3GJP222250-••G	1477	93.6	93.7	92.9	0.84	110	8.0	387	3.6	3.0	0.55	445	74
75 [2]	M3JP 250SMB 4	3GJP252220-••G	1476	93.8	94.2	93.9	0.86	135	7.0	485	2.6	2.9	0.88	505	73
86	M3JP 250SMC 4	3GJP252230-••G	1477	94.9	95.3	95.0	0.85	155	7.8	556	2.9	3.5	0.98	495	74
110	M3JP 280SMC 4	3GJP282230-••G	1485	95.1	95.4	95.1	0.86	193	7.6	707	3.0	3.0	1.85	725	68

[1] Temperature rise class F
[2] Efficiency class IE1

Technical data for Ex d IIB/IIC T4 Gb
Flameproof IE2 cast iron motors

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency Full load 100%	Efficiency 3/4 load 75%	Efficiency 1/2 load 50%	Power factor cosphi	Current I_N A	Current $\frac{I_s}{I_N}$	Torque T_N N_m	Torque $\frac{T_l}{T_N}$	Torque $\frac{T_b}{T_N}$	Moment of inertia J=1/4 GD² kgm²	Weight kg	Sound pressure level L_{PA} dB
1000 r/min = 6 poles				400 V 50 Hz				CENELEC-design							
0.37	M3JP 80MA 6	3GJP083310-••H	952	71.6	68.4	61.4	0.58	1.28	4.6	3.7	3.5	3.9	0.0022	38	50
0.55 [2]	M3JP 80MB 6	3GJP083320-••H	938	70.3	68.1	61.8	0.65	1.73	4.2	5.5	2.7	3.1	0.0022	38	50
0.75	M3JP 90SLA 6	3GJP093010-••H	946	79.2	78.2	74.1	0.64	2.1	5.5	7.6	3.1	3.6	0.0037	52	44
1.1	M3JP 90SLC 6	3GJP093030-••H	938	78.5	77.9	74.3	0.70	3.1	4.6	11.3	2.7	3.0	0.0048	53	44
1.5	M3JP 100LA 6	3GJP103510-••H	951	81.6	81.4	78.8	0.72	3.7	5.3	15.1	2.2	3.0	0.012	69	54
2.2	M3JP 112MB 6	3GJP113320-••H	950	82.5	82.2	79.4	0.72	5.5	5.0	22.1	2.1	2.8	0.014	72	54
3	M3JP 132SMB 6	3GJP133220-••H	961	84.0	84.3	82.5	0.75	6.8	6.0	29.8	1.9	3.2	0.032	105	57
4	M3JP 132SMC 6	3GJP133230-••H	967	85.7	85.6	83.6	0.75	9.3	6.3	39.5	2.1	3.4	0.034	107	57
5.5	M3JP 132SMD 6	3GJP133240-••H	967	87.5	87.7	86.2	0.72	12.7	7.2	54.3	2.3	3.6	0.039	109	62
7.5	M3JP 160MLA 6	3GJP163410-••H	965	87.6	88.6	88.3	0.78	15.8	6.4	74.2	1.7	2.9	0.126	253	65
11	M3JP 160MLB 6	3GJP163420-••H	972	90.1	91.0	90.4	0.81	22.1	6.9	108	2.4	3.5	0.126	253	65
15	M3JP 180MLB 6	3GJP183420-••H	973	90.5	91.0	90.5	0.82	29.7	6.8	147	1.8	3.0	0.25	304	58
18.5	M3JP 200MLA 6	3GJP203410-••G	983	90.5	90.9	90.2	0.82	36.2	7.1	179	3.2	3.1	0.37	300	66
22	M3JP 200MLB 6	3GJP203420-••G	983	91.6	92.0	91.5	0.82	42.8	7.5	213	3.2	3.2	0.43	320	61
30	M3JP 225SMB 6	3GJP223220-••G	985	92.2	92.7	92.4	0.82	57.9	7.4	290	3.4	3.0	0.64	385	61
37	M3JP 250SMA 6	3GJP253210-••G	990	93.4	93.8	93.3	0.81	70.6	6.5	357	2.4	3.1	1.16	455	66
[45]	M3JP 280SMA 6	3GJP283210-••G	990	93.4	93.8	93.5	0.83	83.8	7.0	434	2.5	2.5	1.85	705	66
55	M3JP 280SMB 6	3GJP283220-••G	990	93.8	94.2	93.9	0.84	100	7.0	530	2.7	2.6	2.2	645	66
75	M3JP 315SMA 6	3GJP313210-••G	992	94.4	94.4	93.5	0.82	139	7.4	721	2.4	2.8	3.2	830	70
90	M3JP 315SMB 6	3GJP313220-••G	992	94.8	94.7	94.1	0.84	166	7.5	866	2.4	2.8	4.1	930	70
110	M3JP 315SMC 6	3GJP313230-••G	991	95.0	95.0	94.6	0.83	201	7.4	1059	2.5	2.9	4.9	1100	70
132	M3JP 315MLA 6	3GJP313410-••G	991	95.3	95.4	94.9	0.83	240	7.5	1271	2.7	3.0	5.8	1150	68
160	M3JP 355SMA 6	3GJP353210-••G	993	95.4	95.6	95.2	0.83	291	7.0	1538	2.0	2.6	7.9	1520	75
200	M3JP 355SMB 6	3GJP353220-••G	993	95.7	95.9	95.7	0.83	364	7.2	1923	2.2	2.7	9.7	1680	75
250	M3JP 355SMC 6	3GJP353230-••G	993	95.7	95.8	95.4	0.82	460	7.4	2404	2.6	2.9	11.3	1820	75
315	M3JP 355MLB 6	3GJP353420-••G	992	95.7	96.0	95.5	0.83	570	7.0	3032	2.5	2.7	13.5	2180	75
355	M3JP 355LKA 6	3GJP353810-••G	992	95.7	95.9	95.4	0.81	658	7.6	3417	2.7	2.9	15.5	2690	75
400	M3JP 400LA 6	3GJP403510-••G	993	96.2	96.2	95.6	0.82	731	7.1	3846	2.3	2.7	17	3180	76
400	M3JP 400LKA 6	3GJP403810-••G	993	96.2	96.2	95.6	0.82	731	7.1	3846	2.3	2.7	17	3180	76
450	M3JP 400LB 6	3GJP403520-••G	994	96.6	96.6	96.1	0.82	819	7.4	4323	2.4	2.8	20.5	3430	76
450	M3JP 400LKB 6	3GJP403820-••G	994	96.6	96.6	96.1	0.82	819	7.4	4323	2.4	2.8	20.5	3430	76
500	M3JP 400LC 6	3GJP403530-••G	993	96.6	96.5	96.1	0.83	891	7.2	4809	2.5	2.7	22	3580	76
500	M3JP 400LKC 6	3GJP403830-••G	993	96.6	96.5	96.1	0.83	891	7.2	4809	2.5	2.7	22	3580	76
560	M3JP 400LD 6	3GJP403540-••G	993	96.9	96.9	96.4	0.85	984	7.4	5386	2.4	2.8	24	3680	77
560	M3JP 400LKD 6	3GJP403840-••G	993	96.9	96.9	96.4	0.85	984	7.4	5386	2.4	2.8	24	3680	77
630	M3JP 450LA 6	3GJP453510-••G	994	96.7	96.7	96.3	0.84	1127	6.5	6053	1.1	2.5	31	4320	81
1000 r/min = 6 poles				400 V 50 Hz				High-output design							
14 [1] [2]	M3JP 160MLC 6	3GJP163430-••H	969	89.2	89.5	88.5	0.75	30.1	7.5	138	2.8	4.0	0.126	253	64
18.5 [2]	M3JP 180MLC 6	3GJP183430-••H	971	90.1	90.1	88.5	0.74	41.2	7.3	181	2.5	3.7	0.25	304	61
30 [2]	M3JP 200MLC 6	3GJP203430-••G	983	90.6	90.8	89.6	0.81	59.3	7.5	291	3.5	3.4	0.49	340	65
37 [2]	M3JP 225SMC 6	3GJP223230-••G	983	91.8	92.1	92.2	0.83	69.6	7.1	359	3.0	2.8	0.75	415	64
45	M3JP 250SMB 6	3GJP253220-••G	986	93.1	93.4	93.2	0.84	84.0	7.2	435	3.3	2.8	1.49	500	65
75	M3JP 280SMC 6	3GJP283230-••G	990	94.2	94.7	94.5	0.84	137	7.3	723	2.8	2.7	2.85	725	66

[1] Temperature rise class F
[2] Efficiency class IE1

Technical data for Ex d IIB/IIC T4 Gb
Flameproof IE2 cast iron motors

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE2 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency Full load 100%	Efficiency 3/4 load 75%	Efficiency 1/2 load 50%	Power factor cosphi	Current I_N A	Current $\frac{I_s}{I_N}$	Torque $\frac{T_N}{N_m}$	Torque $\frac{T_l}{T_N}$	Torque $\frac{T_b}{T_N}$	Moment of inertia J=1/4 GD² kgm²	Weight kg	Sound pressure level L_{PA} dB
750 r/min = 8 poles				400 V 50 Hz				CENELEC-design							
0.18	M3JP 80MA 8	3GJP084310-••H	720	57.7	52.0	43.4	0.42	1.15	3.3	2.4	3.7	4.0	0.0022	38	36
0.25	M3JP 80MB 8	3GJP084320-••H	705	61.4	57.2	49.5	0.51	1.21	3.2	3.4	2.6	2.8	0.0022	38	36
0.37	M3JP 90SLA 8	3GJP094010-••H	697	65.5	63.7	57.6	0.63	1.33	3.0	5.1	2.0	2.2	0.0036	50	36
0.55	M3JP 90SLC 8	3GJP094030-••H	695	68.7	67.7	63.2	0.61	2.0	3.0	7.5	2.2	2.4	0.0037	52	36
0.75	M3JP 100LA 8	3GJP104510-••H	720	76.5	74.1	68.3	0.54	2.7	4.2	9.9	2.4	3.1	0.012	69	54
1.1	M3JP 100LB 8	3GJP104520-••H	717	76.4	74.9	70.2	0.57	3.6	3.7	14.6	2.1	2.9	0.012	69	54
1.5	M3JP 112MC 8	3GJP114330-••H	713	75.3	73.3	67.6	0.54	5.4	3.4	20.1	2.0	3.2	0.014	73	54
2.2	M3JP 132SMC 8	3GJP134230-••H	720	80.3	79.2	75.4	0.65	6.1	4.5	29.1	1.7	2.7	0.034	107	59
3 [2]	M3JP 132SMD 8	3GJP134240-••H	711	79.9	80.3	78.1	0.71	8.0	4.1	40.4	1.5	2.8	0.036	109	59
4	M3JP 160MLA 8	3GJP164410-••H	722	83.3	84.7	84.2	0.70	10.3	4.7	52.9	1.6	2.6	0.133	251	59
5.5	M3JP 160MLB 8	3GJP164420-••H	723	86.8	87.2	86.0	0.71	13.5	5.8	72.7	1.9	3.1	0.133	251	53
7.5 [1] [2]	M3JP 160MLC 8	3GJP164430-••H	718	82.0	84.0	84.0	0.70	19.3	5.7	99.8	2.1	2.9	0.133	251	55
11	M3JP 180MLB 8	3GJP184420-••H	723	88.3	89.2	88.7	0.72	25.5	5.6	145	2.0	3.0	0.245	298	63
15	M3JP 200MLA 8	3GJP204410-••G	734	89.9	90.4	89.5	0.79	30.6	6.9	195	2.4	3.2	0.45	315	56
18.5	M3JP 225SMA 8	3GJP224210-••G	734	90.0	90.7	90.2	0.74	39.2	6.1	240	2.2	3.0	0.61	370	55
22	M3JP 225SMB 8	3GJP224220-••G	732	90.6	91.4	91.2	0.81	45.3	6.5	287	1.9	2.9	0.68	350	56
30	M3JP 250SMA 8	3GJP254210-••G	735	91.6	91.0	90.5	0.79	60.7	6.7	389	2.0	2.9	1.25	420	56
37	M3JP 280SMA 8	3GJP284210-••G	742	92.7	92.9	92.2	0.79	72.6	7.3	476	1.7	3.0	1.85	605	65
45	M3JP 280SMB 8	3GJP284220-••G	741	93.2	93.4	92.8	0.78	89.2	7.6	579	1.8	3.1	2.2	645	65
55	M3JP 315SMA 8	3GJP314210-••G	742	93.4	93.9	93.4	0.79	106	7.1	707	1.6	2.7	3.2	830	62
75	M3JP 315SMB 8	3GJP314220-••G	741	93.7	93.8	93.7	0.82	146	7.1	966	1.7	2.7	4.1	930	62
90	M3JP 315SMC 8	3GJP314230-••G	741	94.0	94.3	94.0	0.82	170	7.4	1159	1.8	2.7	4.9	1000	64
110	M3JP 315MLA 8	3GJP314410-••G	740	94.0	94.2	94.3	0.83	211	7.3	1419	1.8	2.7	5.8	1150	72
132	M3JP 355SMA 8	3GJP354210-••G	744	94.7	94.6	94.2	0.80	256	7.5	1694	1.5	2.6	7.9	1520	69
160	M3JP 355SMB 8	3GJP354220-••G	744	95.2	95.2	94.8	0.77	293	7.6	1926	1.6	2.6	9.7	1680	69
200	M3JP 355SMC 8	3GJP354230-••G	742	95.3	95.7	95.5	0.79	385	7.4	2576	1.6	2.6	11.3	1930	69
250	M3JP 355MLB 8	3GJP354420-••G	743	95.4	95.5	95.0	0.80	472	7.5	3213	1.6	2.7	13.5	2370	72
315	M3JP 400LA 8	3GJP404510-••G	743	96.1	96.0	95.6	0.81	592	7.0	4043	1.2	2.6	17	3180	71
315	M3JP 400LKA 8	3GJP404810-••G	743	96.1	96.0	95.6	0.81	592	7.0	4043	1.2	2.6	17	3180	71
355	M3JP 400LB 8	3GJP404520-••G	743	96.2	96.3	96.1	0.83	641	6.8	4562	1.2	2.5	21	3480	71
355	M3JP 400LKB 8	3GJP404820-••G	743	96.2	96.3	96.1	0.83	641	6.8	4562	1.2	2.5	21	3480	71
400	M3JP 400LC 8	3GJP404530-••G	744	96.3	96.4	96.1	0.82	735	7.4	5134	1.3	2.7	24	3680	71
400	M3JP 400LKC 8	3GJP404830-••G	744	96.3	96.4	96.1	0.82	735	7.4	5134	1.3	2.7	24	3680	71
450	M3JP 450LA 8	3GJP454510-••G	744	96.2	96.5	96.2	0.83	813	6.0	5775	1.0	2.5	26	3920	80
500	M3JP 450LB 8	3GJP454520-••G	744	96.3	96.4	96.2	0.83	902	6.4	6417	1.0	2.6	29	4160	80
560	M3JP 450LC 8	3GJP454530-••G	744	96.4	96.5	96.1	0.82	1038	7.0	7188	1.2	2.9	35	4520	80
630 [1]	M3JP 450LD 8	3GJP454540-••G	745	96.6	96.7	96.2	0.81	1162	7.6	8075	1.3	3.2	41	4960	80
750 r/min = 8 poles				400 V 50 Hz				High-output design							
18.5	M3JP 200MLB 8	3GJP204420-••G	734	89.2	89.8	88.8	0.80	37.1	6.9	240	2.2	3.2	0.54	335	57
30	M3JP 225SMC 8	3GJP224230-••G	731	90.7	91.6	91.6	0.78	61.2	6.3	391	2.3	3.0	0.75	410	59
37	M3JP 250SMB 8	3GJP254220-••G	737	92.2	92.9	92.5	0.79	73.0	7.5	479	2.3	3.4	1.52	500	59
55	M3JP 280SMC 8	3GJP284230-••G	741	93.4	93.7	93.6	0.80	107	7.9	708	1.9	3.1	2.85	725	65

[1] Temperature rise class F
[2] Efficiency class IE1

Technical data for Ex d IIB/IIC T4 Gb
Flameproof IE3 cast iron motors

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency Full load 100%	Efficiency 3/4 load 75%	Efficiency 1/2 load 50%	Power factor cosphi	Current I_N A	Current $\frac{I_s}{I_N}$	Torque T_N N_m	Torque $\frac{T_l}{T_N}$	Torque $\frac{T_b}{T_N}$	Moment of inertia J=1/4 GD² kgm²	Weight kg	Sound pressure level L_{PA} dB
3000 r/min = 2 poles				400 V 50 Hz				CENELEC-design							
11	M3JP 160MLA 2	3GJP161410-••L	2943	91.2	92.0	91.6	0.91	19.1	7.2	35.6	2.6	3.6	0.057	225	69
15	M3JP 160MLB 2	3GJP161420-••L	2947	91.9	92.2	91.8	0.88	26.5	8.2	48.5	3.2	4.2	0.063	232	69
18.5	M3JP 160MLC 2	3GJP161430-••L	2949	92.4	93.0	92.6	0.90	32.0	9.0	59.8	3.3	3.9	0.076	246	73
22	M3JP 180MLA 2	3GJP181410-••L	2956	92.7	93.1	92.7	0.90	37.7	7.8	71.0	3.4	3.8	0.110	282	73
30	M3JP 200MLA 2	3GJP201410-••L	2957	93.3	93.8	93.6	0.88	52.4	7.5	96.9	2.5	3.1	0.182	332	73
37	M3JP 200MLB 2	3GJP201420-••L	2960	93.7	94.2	94.1	0.89	64.2	8.2	119.5	3.1	3.4	0.222	359	73
45	M3JP 225SMA 2	3GJP221210-••L	2968	94.0	94.0	93.0	0.87	79.6	7.3	144.8	3.2	3.1	0.296	405	76
55	M3JP 250SMA 2	3GJP251210-••L	2968	94.3	93.7	93.6	0.89	94.8	6.8	177	2.4	3.0	0.426	470	76
75	M3JP 280SMB 2	3GJP281220-••L	2978	94.7	94.4	93.5	0.88	130	7.0	240	2.3	3.0	0.90	766	74
90	M3JP 280SMC 2	3GJP281230-••L	2975	95.0	95.0	94.2	0.88	158	6.4	289	2.1	2.8	0.99	795	74
110	M3JP 315SMB 2	3GJP311220-••L	2982	95.2	94.9	93.9	0.87	192	7.0	352	1.8	2.7	1.3	1008	78
132	M3JP 315SMC 2	3GJP311230-••L	2982	95.4	95.4	94.6	0.87	229	6.8	422	2.0	2.8	1.5	1063	78
160	M3JP 315SMD 2	3GJP311240-••L	2983	95.6	95.6	94.9	0.87	275	7.4	512	2.2	2.8	1.7	1120	78
200	M3JP 315MLA 2	3GJP311410-••L	2983	95.8	95.8	95.3	0.88	342	7.7	640	2.5	3.1	2.1	1190	81
250	M3JP 355SMA 2	3GJP351210-••L	2985	95.8	95.6	94.6	0.89	423	7.7	800	2.1	3.3	3.0	1790	83
315	M3JP 355SMB 2	3GJP351220-••L	2980	95.8	95.7	95.0	0.89	529	7.0	1009	2.1	3.0	3.4	1870	83
355	M3JP 355SMC 2	3GJP351230-••L	2984	95.8	95.8	95.0	0.88	605	7.2	1136	2.2	3.0	3.6	1940	83
3000 r/min = 2 poles				400 V 50 Hz				High-output design							
250	M3JP 315LKB 2	3GJP311820-••L	2983	95.8	96.0	95.5	0.90	419	7.7	800	2.5	3.3	2.9	1630	81
1500 r/min = 4 poles				400 V 50 Hz				CENELEC-design							
11	M3JP 160MLA 4	3GJP162410-••L	1477	91.4	91.8	91.1	0.82	21.1	7.6	71.3	2.6	3.3	0.110	240	61
15	M3JP 160MLB 4	3GJP162420-••L	1477	92.1	92.4	91.6	0.82	28.5	8.2	97.0	3.0	3.7	0.135	259	61
18.5	M3JP 180MLA 4	3GJP182410-••L	1481	92.6	93.2	92.9	0.83	34.9	7.2	119	2.8	3.0	0.219	291	60
22	M3JP 180MLB 4	3GJP182420-••L	1481	93.0	93.5	93.3	0.82	41.4	6.5	142	3.0	3.2	0.243	296	60
30	M3JP 200MLA 4	3GJP202410-••L	1483	93.6	93.8	93.4	0.84	54.8	7.5	193	2.7	3.2	0.385	360	63
37	M3JP 225SMA 4	3GJP222210-••L	1482	93.9	94.1	93.8	0.83	68.9	7.2	239	3.1	3.1	0.427	394	67
45	M3JP 225SMB 4	3GJP222220-••L	1482	94.2	94.4	94.0	0.84	82.3	8.0	290	3.2	3.5	0.525	431	66
55	M3JP 250SMA 4	3GJP252210-••L	1482	94.6	94.7	94.0	0.84	100	7.1	354	2.9	3.4	0.694	442	68
75	M3JP 280SMB 4	3GJP282220-••L	1485	95.0	95.2	94.8	0.86	133	6.4	483	2.3	2.8	1.38	749	75
90	M3JP 280SMC 4	3GJP282230-••L	1485	95.2	95.5	95.2	0.86	158	7.1	578	2.5	2.9	1.73	809	75
110	M3JP 315SMB 4	3GJP312220-••L	1489	95.4	95.5	94.9	0.84	195	7.0	705	2.1	3.0	2.43	1026	71
132	M3JP 315SMC 4	3GJP312230-••L	1488	95.6	95.9	95.5	0.86	231	6.7	847	2.2	2.9	2.9	1099	71
160	M3JP 315SMD 4	3GJP312240-••L	1488	95.8	96.0	95.8	0.85	282	6.9	1026	2.2	3.0	3.2	1139	71
200	M3JP 315MLB 4	3GJP312420-••L	1487	96.0	96.4	96.4	0.86	351	6.8	1284	2.4	3.0	3.9	1312	74
250	M3JP 355SMA 4	3GJP352210-••L	1491	96.0	96.0	95.6	0.86	435	6.4	1601	2.1	2.9	5.9	1791	78
315	M3JP 355SMB 4	3GJP352220-••L	1491	96.0	96.1	95.7	0.85	550	7.3	2018	2.4	3.3	6.9	1959	78
355	M3JP 355SMC 4	3GJP352230-••L	1490	96.0	96.2	95.8	0.86	616	6.3	2273	2.3	2.8	7.2	1999	78
1500 r/min = 4 poles				400 V 50 Hz				High-output design							
250	M3JP 315LKA 4	3GJP312810-••L	1488	96.0	96.3	96.1	0.85	442	6.9	1604	2.5	3.2	4.4	1500	78

Technical data for Ex d IIB/IIC T4 Gb
Flameproof IE3 cast iron motors

IP 55 - IC 411 - Insulation class F, temperature rise class B
IE3 efficiency class according to IEC 60034-30-1; 2014

Output kW	Motor type	Product code	Speed r/min	Efficiency Full load 100%	Efficiency 3/4 load 75%	Efficiency 1/2 load 50%	Power factor cosphi	Current I_N A	Current $\frac{I_s}{I_N}$	Torque T_N N_m	Torque $\frac{T_l}{T_N}$	Torque $\frac{T_b}{T_N}$	Moment of inertia J=1/4 GD² kgm²	Weight kg	Sound pressure level L_{PA} dB
1000 r/min = 6 poles				400 V 50 Hz				CENELEC-design							
7.5	M3JP 160MLA 6	3GJP163410-••L	975	89.1	90.0	90.0	0.77	15.7	5.7	73.2	1.4	3.0	0.089	225	59
11	M3JP 160MLB 6	3GJP163420-••L	975	90.3	91.1	91.1	0.78	22.5	6.4	108	1.6	3.1	0.138	259	64
15	M3JP 180MLA 6	3GJP183410-••L	979	91.2	91.9	91.6	0.79	30.1	5.2	147	1.5	2.7	0.212	288	63
18.5	M3JP 200MLA 6	3GJP203410-••L	989	91.7	91.9	91.2	0.82	35.2	6.5	179	2.2	3.2	0.496	340	59
22	M3JP 200MLB 6	3GJP203420-••L	989	92.2	92.4	91.4	0.81	42.4	7.3	212	2.6	3.5	0.585	367	59
30	M3JP 225SMA 6	3GJP223210-••L	988	92.9	93.0	92.2	0.77	60.4	7.7	291	2.9	3.6	0.724	419	63
37	M3JP 250SMA 6	3GJP253210-••L	990	93.3	93.7	93.5	0.80	71.1	6.5	357	2.4	3.1	1.30	503	58
45	M3JP 280SMB 6	3GJP283220-••L	991	93.7	94.0	93.5	0.84	82	7.4	433	2.7	3.0	1.87	735	72
55	M3JP 280SMC 6	3GJP283230-••L	992	94.1	94.3	93.8	0.86	99	7.5	528	2.8	3.0	2.57	785	71
75	M3JP 315SMB 6	3GJP313220-••L	994	94.6	94.9	94.6	0.84	136	6.8	720	1.8	2.6	4.1	994	75
90	M3JP 315SMC 6	3GJP313230-••L	994	94.9	95.1	94.7	0.84	164	7.2	864	2.0	3.0	4.6	1070	76
110	M3JP 315SMD 6	3GJP313240-••L	994	95.1	95.3	95.0	0.83	200	7.3	1056	2.2	3.1	4.9	1118	75
132	M3JP 315MLB 6	3GJP313420-••L	995	95.4	95.5	95.1	0.82	242	7.3	1266	2.3	3.2	6.3	1292	72
160	M3JP 355SMA 6	3GJP353210-••L	993	95.6	95.8	95.6	0.82	292	6.7	1538	2.5	2.6	7.9	1633	75
200	M3JP 355SMB 6	3GJP353220-••L	993	95.8	96.2	96.1	0.82	365	6.7	1923	2.6	2.5	9.7	1792	75
250	M3JP 355SMC 6	3GJP353230-••L	993	95.8	96.1	95.8	0.81	465	7.7	2404	3.0	3.1	11.3	2009	75
315	M3JP 355MLB 6	3GJP353420-••L	993	95.8	96.1	96.0	0.83	571	6.8	3029	2.6	3.2	13.5	2370	76
355	M3JP 355LKA 6	3GJP353810-••L	993	95.8	96.0	95.9	0.81	653	7.5	3413	2.9	3.2	15.5	2670	76
1000 r/min = 6 poles				400 V 50 Hz				High-output design							
160	M3JP 315LKA 6	3GJP313810-••L	994	95.6	95.8	95.4	0.81	298	7.5	1535	2.2	3.1	7.3	1500	76
750 r/min = 8 poles				400 V 50 Hz				CENELEC-design							
37	M3JP 280SMA 8	3GJP284210-••L	742	91.8	92.1	91.4	0.79	73.0	7.3	476	1.7	3.0	1.85	705	65
45	M3JP 280SMB 8	3GJP284220-••L	741	92.2	92.4	91.8	0.78	89.6	7.6	579	1.8	3.1	2.2	745	65
55	M3JP 315SMA 8	3GJP314210-••L	742	92.5	93.1	92.5	0.80	106	7.7	707	1.8	2.7	3.2	930	62
75	M3JP 315SMB 8	3GJP314220-••L	740	93.1	93.3	93.1	0.79	146	7.1	966	1.7	2.7	4.1	1030	62
90	M3JP 315SMC 8	3GJP314230-••L	739	93.4	93.8	93.4	0.81	171	7.4	1159	1.8	2.7	4.9	1100	64
110	M3JP 315MLA 8	3GJP314410-••L	740	93.7	94.0	94.1	0.80	211	7.3	1419	1.8	2.7	5.8	1250	72
132	M3JP 355SMA 8	3GJP354210-••L	744	94.0	93.9	93.4	0.77	256	7.5	1694	1.5	2.6	7.9	1630	69
160	M3JP 355SMB 8	3GJP354220-••L	744	94.3	94.3	93.9	0.77	293	7.6	1926	1.6	2.6	9.7	1790	69
200	M3JP 355SMC 8	3GJP354230-••L	742	94.6	95.1	94.9	0.79	385	7.4	2576	1.6	2.6	11.3	1930	69
250	M3JP 355MLB 8	3GJP354420-••L	743	94.6	94.8	94.2	0.80	472	7.5	3213	1.6	2.7	13.5	2180	72

Variant codes
Flameproof motors, Ex d IIB/IIC T4 Gb

Variant codes specify additional options and features to the standard motor. The desired features are listed as three-digit variant codes in the motor order. Note also that there are variants that cannot be used together

Most of the variant codes apply to IE2 and IE3 motors. However, confirm the availability of variants for IE3 motors with your ABB sales office before making an order.

		Frame size														
Code/ Variants		80	90	100	112	132	160	180	200	225	250	280	315	355	400	450
Administration																
531	Sea freight packing	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
532	Packing of motor in vertical mounting position	-	-	-	-	-	-	-	•	•	•	•	•	-	-	-
533	Wooden sea freight packing	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
590	Mounting of customer supplied part other than coupling.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Balancing																
417	Vibration acc. to Grade B (IEC 60034-14).	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
423	Balanced without key.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
424	Full-key balancing	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Bearings and Lubrication																
036	Transport lock for bearings.	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
037	Roller bearing at D-end.	-	-	-	-	-	•	•	•	•	•	•	•	-	-	-
040	Heat-resistant grease	○	○	○	○	○	•	•	•	•	•	•	•	•	•	•
058	Angular contact bearing at D-end, shaft force away from bearing.	-	-	-	-	-	-	-	-	-	-	•	•	•	•	•
107	Pt100 2-wire in bearings.	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
128	Double PT100, 2-wire in bearings	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
129	Double PT100, 3-wire in bearings	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
130	Pt100 3-wire in bearings.	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
194	2Z bearings greased for life at both ends.	○	○	○	○	○	•	•	•	•	•	-	-	-	-	-
433	Outlet grease collector	-	-	-	-	-	-	-	-	-	-	•	•	•	•	•
506	Nipples for vibration measurement: SKF Marlin Quick Connect stud CMSS-2600-3	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
593	Bearings grease suitable for food and beverage industry.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
654	Provision for vibration sensors (M8x1)	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
795	Lubrication information plate	-	-	-	-	-	•	•	•	•	•	○	○	○	○	○
796	Grease nipples JIS B 1575 PT 1/8 Type A	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
797	Stainless steel SPM nipples	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
798	Stainless steel grease nipples	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
799	Grease nipples flat type DIN 3404, thread M10x1	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
800	Grease nipples JIS B 1575 PT 1/8” pin type	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
Branch standard designs																
178	Stainless steel / acid proof bolts.	○	○	○	○	○	•	•	•	•	•	•	•	•	•	•
204	Jacking bolts for foot mounted motors.	-	-	-	-	-	•	•	•	•	•	•	•	○	○	○
209	Non-standard voltage or frequency, (special winding).	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
396	Motor designed for ambient temperature -20 °C to -40 °C, with space heaters (code 450/451 must be added)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-
397	Motor designed for ambient temperature -40 °C to -55 °C, with space heaters (code 450/451 must be added)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-
398	Motor designed for ambient temperature -20 °C to -40 °C	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-
399	Motor designed for ambient temperature -40 °C to -55 °C	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-
425	Corrosion protected stator and rotor core.	○	○	○	○	○	○	○	○	○	○	•	•	•	•	•
524	Special run-out tolerances on flange and shaft for close coupled pump applications.	-	-	-	-	•	•	•	•	•	•	•	•	•	-	-
786	Special design shaft upwards (V3, V36, V6) for outdoor mounting.	•	•	•	•	•	•	•	•	•	•	-	-	-	-	-
Cooling system																
044	Unidirectional fan for reduced noise level. Rotation clockwise seen from D-end. Available only for 2-pole motors.	-	-	-	-	-	-	-	-	-	-	•	•	•	•	-
045	Unidirectional fan for reduced noise level. Rotation counter clockwise seen from D-end. Available only for 2-pole motors.	-	-	-	-	-	-	-	-	-	-	•	•	•	•	-
068	Light alloy metal fan	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
183	Separate motor cooling (fan axial, N-end).	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•

○ Included as standard
• Available as option
- Not applicable

Code/ Variants		Frame size 80	90	100	112	132	160	180	200	225	250	280	315	355	400	450
206	Steel fan	-	-	-	-	-	•	•	•	•	•	•	•	•	•	-
514	Separate motor cooling (fan on top)	-	-	-	-	-	-	-	-	-	-	•	•	•	•	•
791	Stainless steel fan cover	-	-	-	-	-	-	-	-	•	•	•	•	•	•	•
Coupling																
035	Assembly of customer supplied coupling-half.	-	-	-	-	-	-	-	-	-	-	•	•	•	•	•
Documentation																
141	Binding dimension drawing.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Drain holes																
448	Draining holes with metal plugs.	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
Earthing Bolt																
525	External earthing bolts on motor feet	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Hazardous Environments																
334	Ex t, Dust group III B T125C Db, IP6X (non-conductive dust) acc. IEC/EN60079-31.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
336	Ex t, Dust group III C T125 Db, IP6X (conductive dust) acc. IEC/EN60079-31.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
461	Ex d(e) design, Group II C	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-
464	Alleinschutz' design. Certification of flame proof motor and protection device together.	•	•	•	•	•	•	•	•	•	•	•	-	-	-	-
508	Exde from Exd.	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-
516	Ex i approved temperature detectors (Pt100)	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
813	Thermistor-based surface temperature protection T4 for frequency convertor duty.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-
814	Ex t (DIP) motors, temperature class T 150C.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
816	Pt-100-based surface temperature protection T4 for frequency convertor duty. 3-wire system.	-	-	-	-	-	•	•	•	•	•	•	•	•	•	-
Heating elements																
450	Heating element, 100-120 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
451	Heating element, 200 - 240 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Insulation system																
014	Winding insulation class H.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
405	Special winding insulation for frequency converter supply.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Marine																
024	Fulfilling Bureau Veritas (BV) requirements, with certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
025	Fulfilling Det Norske Veritas (DNV) requirements, with certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
026	Fulfilling Lloyds Register of Shipping (LR) requirements, with certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
027	Fulfilling American Bureau of Shipping (ABS) requirements, with certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
049	Fulfilling Germanischer Lloyd (GL) requirements, with certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
050	Fulfilling Registro Italiano Navale (RINA) requirements, with certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
051	Fulfilling Russian Maritime Register of Shipping (RS) requirements, with certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
096	Fulfilling Lloyds Register of Shipping (LR) requirements, without certificate (non-essential duty only)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
186	Fulfilling Det Norske Veritas (DNV) requirements, without certificate (non-essential duty only)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
481	Fulfilling Nippon Kaiji Kyokai (NK) requirements, with certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
483	Fulfilling China Classification Societies (CCS) requirements (Beijing), with certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
484	Fulfilling Korea Register of Shipping (KR) requirements, with certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
491	Fulfilling Nippon Kaiji Kyokai (NK) requirements, without certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
492	Fulfilling Registro Italiano Navale (RINA) requirements, without certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
493	Fulfilling China Classification Societies (CCS) requirements (Beijing), without certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
494	Fulfilling Korea Register of Shipping (KR) requirements, without certificate.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
496	Fulfilling Bureau Veritas (BV) requirements, without certificate(non-essential duty only)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
675	Fulfilling American Bureau of Shipping (ABS) requirements, without certificate (non-essential duty only)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
676	Fulfilling Germanischer Lloyd (GL) requirements, without certificate (non-essential duty only)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Mounting arrangements																
007	IM 3001 flange mounted, IEC flange, from IM 1001 (B5 from B3).	•	•	•	•	•	-	-	-	-	-	-	-	-	-	-
008	IM 2101 foot/flange mounted, IEC flange, from IM 1001 (B34 from B3).	•	•	•	•	•	-	-	-	-	-	-	-	-	-	-
009	IM 2001 foot/flange mounted, IEC flange, from IM 1001 (B35 from B3).	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
047	IM 3601 flange mounted, IEC flange, from IM 3001 (B14 from B5).	•	•	•	•	•	-	-	-	-	-	-	-	-	-	-

○ Included as standard
• Available as option
- Not applicable

Code/	Variants	Frame size 80	90	100	112	132	160	180	200	225	250	280	315	355	400	450
066	Modified for specified mounting position differing from IM B3 (1001), IM B5 (3001), B14 (3601), IM B35 (2001), IM B34 (2101)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
093	IM 3601 flange mounted, IEC flange, from IM 1001 (B14 from B3).	•	•	•	•	•	-	-	-	-	-	-	-	-	-	-
228	Flange FF 130.	•	•	•	•	-	-	-	-	-	-	-	-	-	-	-
229	Flange FT 130.	•	•	•	•	-	-	-	-	-	-	-	-	-	-	-
235	Flange FF 165.	○	•	•	•	•	-	-	-	-	-	-	-	-	-	-
236	Flange FT 165.	-	•	•	•	•	-	-	-	-	-	-	-	-	-	-
245	Flange FF 215.	-	-	○	○	•	-	-	-	-	-	-	-	-	-	-
246	Flange FT 215.	-	-	•	•	•	-	-	-	-	-	-	-	-	-	-
256	Flange FT 265.	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-
257	Flange FF 100.	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-
258	Flange FT 100.	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-
259	Flange FF 115.	•	•	-	-	-	-	-	-	-	-	-	-	-	-	-
260	Flange FT 115.	•	•	-	-	-	-	-	-	-	-	-	-	-	-	-
305	Additional lifting lugs.	-	-	-	-	-	-	-	-	-	-	•	•	•	•	•
309	IM 1001 foot mounted, from IM 3001 (B3 from B5).	•	•	•	•	•	•	•	-	-	-	-	-	-	-	-
311	IM 2001 foot/flange mounted, IEC flange, from IM 3001 (B35 from B5).	•	•	•	•	•	-	-	-	-	-	-	-	-	-	-
Painting																
105	Paint thickness report.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
114	Special paint color, standard grade	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
115	Painting system C4M acc. to ISO 12944-2: 1998.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
168	Primer paint only.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
303	Painted insulation layer on inside of the terminal boxes.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
710	Thermally sprayed zink metallizing with acrylic top coat	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
711	Painting system C5-M very high, acc. to ISO 12944-2:1998	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
754	Painting system C5M acc. to ISO 12944-2:1998	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Protection																
005	Protective roof, vertical motor, shaft down.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
072	Radial seal at D-end. Not possible for 2-pole , 280 and 315 frames	•	•	•	•	•	•	•	•	•	•	-	-	-	-	-
073	Sealed against oil at D-end.	•	•	•	•	•	•	•	•	•	•	•	•	-	-	-
158	Degree of protection IP65.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
250	Degree of protection IP66.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
401	Protective roof, horizontal motor.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
403	Degree of protection IP56.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
434	Degree of protection IP56, open deck.	-	-	-	-	-	•	•	•	•	•	•	•	•	•	-
783	Labyrinth sealing at D-end.	•	•	•	•	•	•	•	•	•	•	○	○	○	○	○
Rating & instruction plates																
002	Restamping voltage, frequency and output, continuous duty.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
004	Additional text on std rating plate (max 12 digits on free text line).	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
095	Restamping output (maintained voltage, frequency), intermittent duty.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
126	Tag plate	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
135	Mounting of additional identification plate, stainless.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
139	Additional identification plate delivered loose.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
159	Additional plate with text “Made in ....”	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
161	Additional rating plate delivered loose.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
163	Frequency converter rating plate. Rating data according to quotation.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
181	Rating plate with ABB standard loadability values for VSD operation. Other auxiliaries for VSD operation to be selected as necessary.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-
528	Rating plate sticker	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Shaft & rotor																
069	Two shaft extensions according to catalog drawings.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
070	Special shaft extension at D-End, standard shaft material	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
164	Shaft extension with closed keyway	○	○	○	○	○	○	○	○	○	○	•	•	•	•	-
165	Shaft extension with open keyway	•	•	•	•	•	•	•	•	•	•	○	○	○	○	○
410	Shaft material stainless steel	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
591	Special shaft extension according to customer specification.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
600	Special shaft extension at N-end, standard shaft material.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
630	Shaft material certificate 3.1/3.2 according to EN10204:2004	-	-	-	-	•	•	•	•	•	•	•	•	•	•	•
Standards and Regulations																
248	Design according to Petronas PTS 33.66.05.31-GEN. February 2010.	•	•	•	•	•	•	•	•	•	•	•	•	•	-	-
251	Shell DEP 33.66.05.31-GEN. February 2012.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
252	Shell DEP 33.66.05.31-GEN. February 2012, with standard winding >55 kW.	-	-	-	-	-	-	-	-	-	-	•	-	-	-	-
408	Fulfilling EISA Subtype II efficiency requirements, CC031A.	-	-	-	-	-	•	•	•	•	•	•	•	-	-	-

○ Included as standard
• Available as option
- Not applicable

Code/	Variants	Frame size 80	90	100	112	132	160	180	200	225	250	280	315	355	400	450
540	China energy label	•	•	•	•	•	•	•	•	•	•	•	•	•	-	-
541	Inmetro certification	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-
543	Australian MEPS	•	•	•	•	•	•	•	•	•	•	•	•	•	-	-
544	Australian HE MEPS	-	-	-	-	-	•	•	•	•	•	•	•	•	-	-
547	Certificate of conformity according TR-CU 012/2011 for customs union RU, KZ, BY.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
782	Fulfilling CQST Certification requirements (China)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	-
Stator winding temperature sensors																
121	Bimetal detectors, break type (NCC), (3 in series), 130 °C, in stator winding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
122	Bimetal detectors, break type (NCC), (3 in series), 150 °C, in stator winding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
123	Bimetal detectors, break type (NCC), (3 in series), 170 °C, in stator winding	-	-	-	-	-	-	-	-	-	-	•	•	•	•	•
125	Bimetal detectors, break type (NCC), (2x3 in series), 150 °C, in stator winding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
127	Bimetal detectors, break type (NCC), (3 in series, 130 °C & 3 in series, 150 °C), in stator winding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
328	PTC - thermistors (3 in series), 120°C, in stator winding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
435	PTC - thermistors (3 in series), 130 °C, in stator winding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
439	PTC - thermistors (2x3 in series), 150 °C, in stator winding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
441	PTC - thermistors (3 in series, 130 °C & 3 in series, 150 °C), in stator winding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
445	Pt100 2-wire in stator winding, 1 per phase	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
446	Pt100 2-wire in stator winding, 2 per phase	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
502	Pt100 3-wire in stator winding, 1 per phase	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
503	Pt100 3-wire in stator winding, 2 per phase	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
511	PTC thermistors (2 x 3 in series), 130 °C, in stator winding	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Terminal box																
021	Terminal box LHS (seen from D-end).	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-
022	Cable entry LHS (seen from D-end).	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
157	Terminal box degree of protection IP65.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
180	Terminal box RHS (seen from D-end).	-	-	-	-	-	•	•	-	-	-	-	-	-	-	-
380	Separate terminal box for temperature detectors, std. material	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
418	Separate terminal box for auxiliaries, standard material.	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
466	Terminal box at N-end.	-	-	-	-	-	-	-	•	•	•	•	•	•	•	•
468	Cable entry from D-end.	•	•	•	•	•	•	•	•	•	•	•	•	-	-	-
469	Cable entry from N-end.	•	•	•	•	•	•	•	•	•	•	•	•	-	-	-
553	Terminal box degree of protection IP66.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
568	Separate terminal box for heating elements, std. material	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
730	Prepared for NPT cable glands.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
734	Standard cable gland, Ex d IIC, armoured cable.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
735	Standard cable gland, Ex d IIC, non-armoured cable.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Testing																
145	Type test report from a catalogue motor, 400V 50Hz.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
146	Type test with report for one motor from specific delivery batch.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
148	Routine test report.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
150	Customer witnessed testing. Specify test procedure with other codes.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
222	Torque/speed curve, type test and multi-point load test with report for one motor from specific delivery batch.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
560	Shaft voltage test.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
561	Overspeed test.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
562	Overvoltage test.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
760	Vibration level test	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
761	Vibration spectrum test for one motor from specific delivery batch.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
762	Noise level test for one motor from specific delivery batch.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
763	Noise spectrum test for one motor from specific delivery batch.	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
764	Test for one motor from specific delivery batch with ABB frequency converter available at ABB test field. ABB standard test procedure.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Variable speed drives																
479	Mounting of other type of pulse tacho with shaft extension, tacho not included.	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
680	2048 pulse tacho, Ex d, tD, L&L 841910001	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•
701	Insulated bearing at N-end.	-	-	-	-	-	-	-	-	-	-	•	•	•	•	•
747	1024 pulse tacho, Ex d, tD, L&L 841910002	-	-	-	-	-	•	•	•	•	•	•	•	•	•	•

○ Included as standard
• Available as option
- Not applicable

Mechanical design
Motor frame and drain holes

Motor frame
The motor frame, end shields and terminal box are made of cast iron. Motors in frame size 200 and larger have integrated feet for rigid and vibration free mounting, motors in frame size 80-180 have detachable feet made of forged steel for maximum flexibility and rigidity.

Motors can be supplied for foot mounting, flange mounting, and combinations of these.

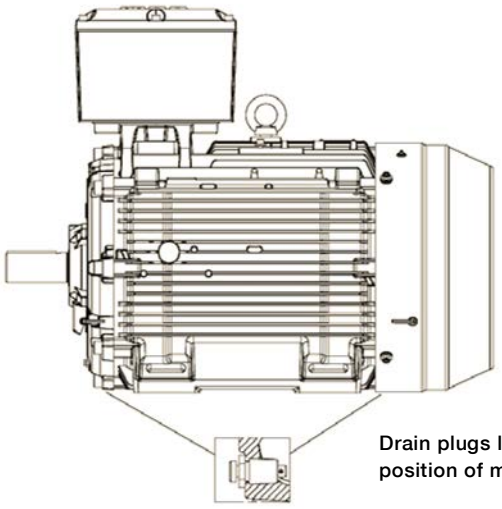
Drain holes
Flame proof Ex d motors are provided without drain holes and plugs as standard.

It's recommended that motors that will be operated in very humid or wet environments, and especially under intermittent duty, should be provided with drain holes with plugs to ensure that water possibly condensed inside the enclosure can easily be drained. Flame proof drain plugs which can be easily opened and closed are available as an option for motors in frame size 160 and larger. Please refer to the variant code section, variant 448 under heading "Drain holes".

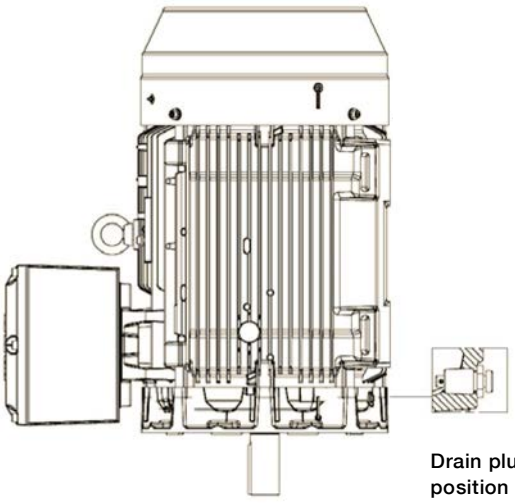
When mounting arrangement differs from foot mounted IM B3, mention variant code 066 when ordering to ensure the drain plug is mounted in the lowest position.

Lifting lugs
All motors are equipped with lifting lugs for safe lifting of the motor. The lugs are designed for lifting the motor only, they may not be used for lifting the motor and the equipment on which it is mounted.

Frame size	Type of lugs	Horisontal mounting B3, B35	Vertical mounting V1, V3
80	Detachable lifting eye	1 pcs close to terminal box	1 pcs close to terminal box
90-112	Integrated in casting	2 pcs close to terminal box on top	2 pcs close to terminal box
132	Integrated in casting	1 pcs at D-end, 1 pcs at N-end	1 pcs at D-end, 1 pcs at N-end
160-180	Detachable eye bolt	1 pcs close to terminal box on top	2 pcs, either at N-end or D-end depending on need
200-250	Integrated in casting	1 pcs at D-end, 1 pcs at N-end	2 pcs at N-end, 2 pcs at D-end
280-450	Detachable eye bolt	1 pcs close to terminal box on top	2 pcs, either at N-end or D-end depending on need



Drain plugs located in lowest position of motor



Drain plug in lowest position of motor

Heating elements

Heating elements are installed on stator winding coil heads to keep the winding free of corrosion in humid conditions. The power of the heating elements is shown in the table. You can order heating elements with variant code 450 or 451.

Motor size	80	90	100	112	132	160	180
Power (W)	25	25	25	25	25	25	25

Motor size	200	225	250	280	315	355	400	450
Power (W)	25	60	60	60	2x60	2x60	2x60	2x100

Motors for marine applications mounted on open deck may have heating element powers differing from the ones shown in this table.

Bearings

ABB's flame proof motors are normally fitted with single-row deep-groove grease lubricated ball bearings, as shown in the table below.

If the bearing at the D-end is replaced with a roller bearing (NU- or NJ-), higher radial forces can be handled. Roller bearings are suitable for belt-drive applications and can be ordered with variant code 037. Note that the possibility to have roller bearing at D-end is limited on larger flame proof motors due to the higher radial clearance in bearing and possible bending of shaft together with narrow flame path between shaft and inner bearing cover, especially in conjunction with gas group IIC design.

When high axial forces are involved, angular-contact ball bearings should be used. When ordering a motor with an angular-contact ball bearing, specify also the method of mounting and the direction and magnitude of axial force to ensure that optimal bearing system design is chosen. The variant codes for ordering angular-contact ball bearings are 058 and 059.

Standard and alternative designs

		Standard design		Alternative design		
		Deep groove ball bearings		Roller bearings (037)	Roller bearings (037)	Angular contact ball bearing (058)
Motor size	Number of poles	D-end	N-end	D-end, gas group IIB	D-end, gas group IIC	D-end
80	2 - 8	6205-2Z/C3	6204-2Z/C3	NA	NA	NA
90	2 - 8	6205-2Z/C3	6205-2Z/C3	NA	NA	NA
100	2 - 8	6206-2Z/C3	6206-2Z/C3	NA	NA	NA
112	2 - 8	6206-2Z/C3	6206-2Z/C3	NA	NA	NA
132	2 - 8	6208-2Z/C3	6208-2Z/C3	NA	NA	NA
160	2 - 12	6309/C3	6309/C3	NU 309 ECP/C3	NU 309 ECP/C3	NA
180	2 - 12	6310/C3	6310/C3	NU 310 ECP/C3	NU 310 ECP/C3	NA
200	2	6312M/C3	6310M/C3	NU 312 ECP/C3	NU 312 ECP/C3	NA
200	4 - 12	6312/C3	6310/C3	NU 312 ECP/C3	NU 312 ECP/C3	NA
225	2	6313M/C3	6312M/C3	NU 313 ECP/C3	NU 313 ECP/C3	NA
225	4 - 12	6313/C3	6312/C3	NU 313 ECP/C3	NU 313 ECP/C3	NA
250	2	6315M/C3	6313M/C3	NU 315 ECP/C3	NA	NA
250	4 - 12	6315/C3	6313/C3	NU 315 ECP/C3	NA	NA
280	2	6316/C3	6316/C3	[1]	NA	7316 B
	4 - 12	6316/C3	6316/C3	NU 316 ECP/C3	NA	7316 B
315	2	6316/C3	6316/C3	[1]	NA	7316 B
	4 - 12	6319/C3	6316/C3	NU 319 ECP/C3	NA	7319 B
355	2	6316M/C3	6316M/C3	NA	NA	7316 B
	4 - 12	6322/C3	6316/C3	NA	NA	7322 B
400	2	6317M/C3	6317M/C3	NA	NA	7317 B
	4 - 12	6324/C3	6319/C3	NA	NA	7324 B
450	4 - 12	6326M/C3	6322M/C3	NA	NA	7326 B

[1] On request

Axially-locked bearings

All motors with deep groove ball bearings are equipped as standard with an axially locked bearing at the D-end.

Transport locking

Motors with roller bearings or an angular-contact ball bearing are fitted with a transport lock before dispatch to prevent damage to bearings during transport. A warning label is attached to motors when transport locking is used.

Locking may also be fitted in other cases if severe transport conditions are expected.

Bearing seals

Table on next page present the standard and alternative and types of bearing seals per motor size.

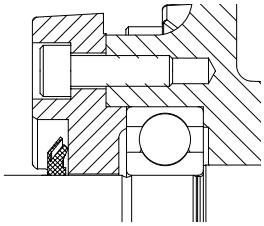
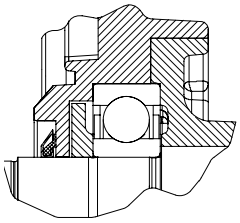
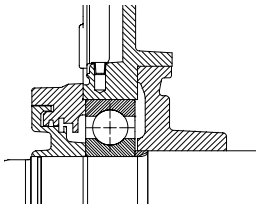
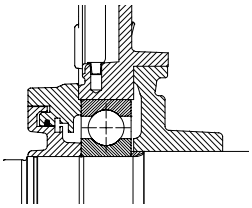
Bearing seals for motor sizes 80 - 450

Motor size	Number of poles	Standard design		Alternative design	
		D-end	N-end	Radial seal at D-end (variant code 072) [1]	Labyrinth seal at D-end (variant code 783) [1]
80	2 - 8	Gamma seal	Gamma seal	Radial seal	Labyrinth seal
90	2 - 8	Gamma seal	Gamma seal	Radial seal	Labyrinth seal
100	2 - 8	Gamma seal	Gamma seal	Radial seal	Labyrinth seal
112	2 - 8	Gamma seal	Gamma seal	Radial seal	Labyrinth seal
132	2 - 8	Gamma seal	Gamma seal	Radial seal	Labyrinth seal
160	2- 12	Gamma seal	Gamma seal	Radial seal	Labyrinth seal
180	2 - 12	Gamma seal	Gamma seal	Radial seal	Labyrinth seal
200	2 - 12	Gamma seal	Gamma seal	Radial seal	Labyrinth seal
225	2 - 12	Gamma seal	Gamma seal	Radial seal	Labyrinth seal
250	2 - 12	Gamma seal	Gamma seal	Radial seal	Labyrinth seal
280	2 - 12	Labyrinth seal	V-ring [2]	NA	Standard
315	2 - 12	Labyrinth seal	V-ring [2]	NA	Standard
355	2 - 12	Labyrinth seal	V-ring [2]	NA	Standard
400	2	Labyrinth seal	Labyrinth seal	NA	Standard
400	4 - 12	Labyrinth seal	V-ring	NA	Standard
450	4 - 12	Labyrinth seal	Labyrinth seal	NA	Standard

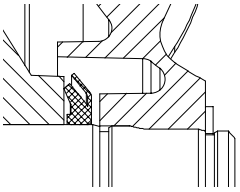
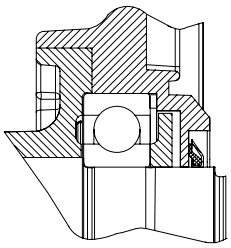
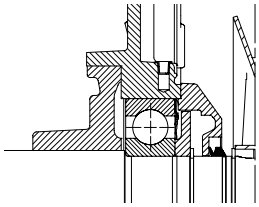
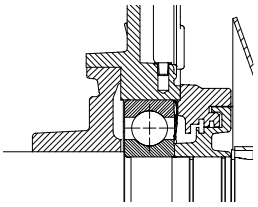
[1] N-end bearing seal of standard design, special N-end bearing seal arrangements on request
[2] V-ring on motors with efficiency class IE2, labyrinth seal on IE3 motors

Standard design

D-end

N-end

Motor size, seal type D-end / N-end

80-132, gamma/gamma seal

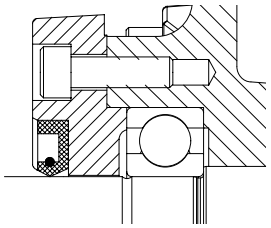
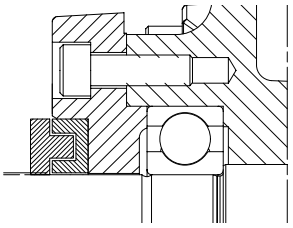
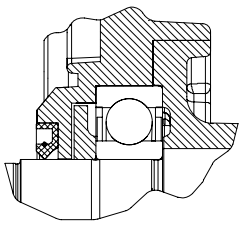
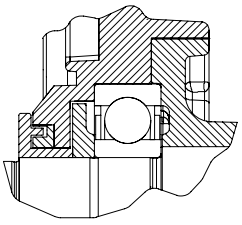
160-250, gamma/ gamma seal

280-355, 400 4-12 pole, labyrinth/V-ring seal

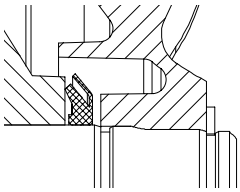
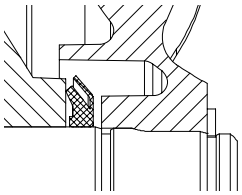
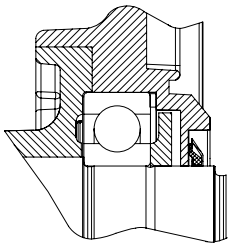
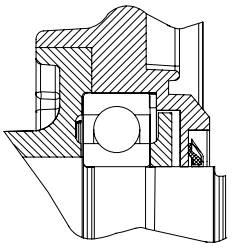
400 2-pole, 450 4-12 pole, labyrinth/labyrinth seal

Alternative design

D-end

N-end

Motor size, seal type D-end / N-end

80-132, VC072 radial/ gamma seals

80-132, VC783 labyrinth/ gamma seals

160-250, VC072 radial/ gamma seals

160-250, VC783 labyrinth/ gamma seals

Bearing life and lubrication

The nominal life L_{10h} of a bearing is defined according to ISO 281 as the number of operating hours achieved or exceeded by 90 % of identical bearings in a large test series under specified conditions. 50 % of bearings achieve at least five times this lifetime.

The calculated bearing life L_{10h} for power transmission by means of coupling is for horizontally mounted motors in sizes up to 315 ≥ 100,000 hours.

Lubrication

On delivery, motors in frame size 160 and above are pre-lubricated with high-quality grease. Before first start-up, see instructions for re-lubrication and recommended grease in the installation, operation, maintenance and safety manual for low voltage motors for explosive atmospheres delivered together with the motor, or see the lubrication plate on the motor.

Motors with bearings greased for life

Motors in frame sizes 80-132 are equipped with bearings greased for life, while this is available as an option for frame sizes 160-250. Bearings are lubricated with high-quality, high-temperature grease. Bearing types are stated on the rating plate.

The approximate lifetime of bearings in four-pole motors is about 40 0000 duty hours. Lifetime is subject to the load conditions of the application run by the motor.

Motors with re-lubrication nipples

In frame sizes 160-450, the bearing system is provided with valve discs to ease lubrication. Motors are lubricated while running. The grease outlet opening has closing valves at both ends. These should be opened before greasing and closed 1-2 hours after re-greasing. This ensures that the construction is tight and bearings remain dust- and dirt-free.

A grease-collection method can be used optionally.

The following tables show lubrication intervals according to the L_1 principle for various nominal speeds in 25 °C ambient temperature. These values apply to horizontally mounted motors (B3) with 80 °C bearing temperature and high-quality grease containing lithium-complex soap and mineral or PAO-oil.

Lubrication intervals in duty hours for ball bearings

Frame size	Amount of grease g/bearing	Amount of grease g/N-end	Speed 3600 r/min	Speed 3000 r/min	Speed 1800 r/min	Speed 1500 r/min	Speed 1000 r/min	Speed 500-900 r/min
Ball bearings								
Lubrication intervals in duty hours								
160	13	13	7100	8900	14300	16300	20500	21600
180	15	15	6100	7800	13100	15100	19400	20500
200	20	15	4300	5900	11000	13000	17300	18400
225	23	20	3600	5100	10100	12000	16400	17500
250	30	23	2400	3700	8500	10400	14700	15800
280	35	35	1900	3200	-	-	-	-
280	40	40	-	-	7800	9600	13900	15000
315	35	35	1900	3200	-	-	-	-
315	55	40	-	-	5900	7600	11800	12900
355	35	35	1900	3200	-	-	-	-
355	70	40	-	-	4000	5600	9600	10700
400	40	40	1500	2700	-	-	-	-
400	85	55	-	-	3200	4700	8600	9700
450	95	70	-	-	2500	3900	7700	8700

Lubrication intervals in duty hours for roller bearings

Frame size	Amount of grease g/bearing	Amount of grease g/N-end	Output kW	Speed 3600 r/min	Speed 3000 r/min	Output kW	Speed 1800 r/min	Speed 1500 r/min	Output kW	Speed 1000 r/min	Output kW	Speed 500-900 r/min
Roller bearings												
Lubrication intervals in duty hours												
160	13	13	all	3600	4500	all	7200	8100	all	10300	all	10800
180	15	15		3000	3900	all	6600	7500	all	9700	all	10200
200	20	15		2100	3000	all	5500	6500	all	8600	all	9200
225	23	20		1800	1600	all	5100	6000	all	8200	all	8700
250	30	23		1200	1900	all	4200	5200	all	7300	all	7900
280	40	40		-	-	all	4000	5300	all	7000	all	8500
315	55	40		-	-	all	2900	3800	all	5900	all	6500

Radial forces

Pulley diameter

When the desired bearing life has been determined, the minimum permissible pulley diameter can be calculated with FR as follows:

$$D = \frac{1.9 \bullet 10^7 \bullet K \bullet P}{n \bullet F_R}$$

Where:	
D:	pulley diameter, mm
P:	power requirement, kW
n:	motor speed, r/min.
K:	belt tension factor, dependent on belt type and type of duty. A common value for V-belts is 2.5
F_R:	permissible radial force, refer to tables below.

Permissible loading on the shaft

The following table shows permissible radial forces on the shaft in Newtons, assuming zero axial force, a 25 °C ambient temperature, and normal conditions. The values are given for a calculated bearing life L_{10h} of 40 000 hours per motor size.

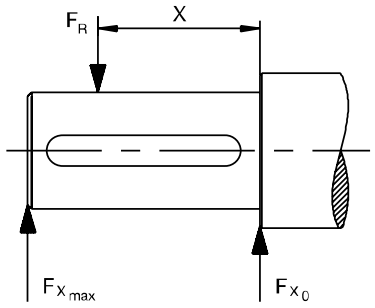
These calculated values further assume mounting position IM B3 (foot-mounted), with force directed sideways. In some cases, the strength of the shaft together with flame path dimensions affects permissible forces.

Permissible loads of simultaneous radial and axial forces can be supplied on request.

If the radial force is applied between points X0 and Xmax, the permissible force FR can be calculated with the following formula:

$$F_R = F_{X0} - \frac{X}{E}(F_{X0} - F_{Xmax})$$

Where:	
E:	length of the shaft extension in the standard version



Permissible radial forces, motor sizes 80-132

			Basic design with deep groove ball bearings L_{10h}=40,000h				Roller bearings L_{10h}=40,000h			
			Mounting arrangement IM B3				Mounting arrangement IM B3			
			Gas group IIB		Gas group IIC		Gas group IIB		Gas group IIC	
Motor size	No. of poles	Length of shaft extension E (mm)	F_{X0}(N)	F_{Xmax}(N)	F_{X0}(N)	F_{Xmax}(N)	F_{X0}(N)	F_{Xmax}(N)	F_{X0}(N)	F_{Xmax}(N)
80	2	40	619	524	619	524	NA		NA	
	4	40	780	663	780	663	NA		NA	
	6	40	893	759	893	759	NA		NA	
	8	40	983	834	983	834	NA		NA	
90	2	50	561	473	561	473	NA		NA	
	4	50	803	677	803	677	NA		NA	
	6	50	919	775	919	775	NA		NA	
	8	50	1011	853	1011	853	NA		NA	
100	2	60	553	457	553	457	NA		NA	
	4	60	1050	868	1050	868	NA		NA	
	6	60	1267	1047	1267	1047	NA		NA	
	8	60	1395	1153	1395	1153	NA		NA	
112	2	60	553	457	553	457	NA		NA	
	4	60	1050	868	1050	868	NA		NA	
	6	60	1267	1047	1267	1047	NA		NA	
	8	60	1394	1152	1394	1152	NA		NA	
132	2	80	1354	1112	1354	1112	NA		NA	
	4	80	1772	1454	1772	1454	NA		NA	
	6	80	2028	1665	2028	1665	NA		NA	
	8	80	2234	1833	2234	1833	NA		NA	

Permissible radial forces, motor sizes 160 to 450

Motor size	Poles	Length of shaft extension E (mm)	Basic design with deep groove ball bearings L_{10h}=40,000h				Roller bearings L_{10h}=40,000h			
			Mounting arrangement IM B3				Mounting arrangement IM B3			
			Gas group IIB		Gas group IIC		Gas group IIB		Gas group IIC	
			F_{X0}(N)	F_{Xmax}(N)	F_{X0}(N)	F_{Xmax}(N)	F_{X0}(N)	F_{Xmax}(N)	F_{X0}(N)	F_{Xmax}(N)
160 ML_	2	110	2530	2120	2530	2120	6400	1800	6400	1800
	4	110	3180	2670	3180	2670	7600	1800	7600	1800
	6	110	3650	3040	3650	3040	7600	1800	7600	1800
	8	110	4020	3040	4020	3040	7600	1800	7600	1800
180 ML_	2	110	2900	2440	2900	2440	6970	2700	6970	2700
	4	110	3660	3080	3660	3080	8500	2700	8500	2700
	6	110	4190	3520	4190	3520	8500	2700	8500	2700
	8	110	4620	3880	4620	3880	8500	2700	8500	2700
200 ML_	2	110	3830	3150	3830	3150	9510	7000	9510	4200
	4	110	4820	3980	4820	3980	11710	7000	11710	4200
	6	110	5520	4550	5520	4550	13230	7000	13230	4200
	8	110	6080	5000	6080	5000	14420	7000	14420	4200
225 SM_	2	110	4350	3660	4350	3660	11650	7000	9300	3000
	4	140	5490	2800	5490	2800	14340	7200	9300	2200
	6	140	6280	2800	6280	2800	16190	7200	9300	2200
	8	140	6920	2800	6920	2800	17300	7200	9300	2200
250 SM_	2	140	5390	4350	5390	4350	15420	6700	NA	
	4	140	6790	5480	6790	5480	18980	9200	NA	
	6	140	7760	6270	3000	2800	21000	9200	NA	
	8	140	8550	6900	3000	2800	21000	9200	NA	
280 SM_	2	140	5835	4900	[1]		16500	6000	NA	
	4	140	7360	6110	[1]		20100	9200	NA	
	6	140	8425	6980	[1]		22690	9200	NA	
	8	140	9165	7700	[1]		24740	9200	NA	
315 SM_	2	140	5815	4960	[1]		16540	6000	NA	
	4	170	9025	7470	[1]		26590	9600	NA	
	6	170	10310	8530	[1]		30030	10160	NA	
	8	170	11370	9410	[1]		32740	10105	NA	
315 ML_	2	140	5855	5080	[1]		16705	6205	NA	
	4	170	8980	7590	[1]		26550	13705	NA	
	6	170	10255	8665	[1]		29970	13710	NA	
	8	170	11335	9385	[1]		32730	9945	NA	
315 LK_	2	140	5860	5195	[1]		16885	6080	NA	
	4	170	9185	7945	[1]		27225	13475	NA	
	6	170	10475	9060	[1]		30735	13500	NA	
355 SM_	2	140	5790	5085	[1]		NA		NA	
	4	210	11930	9890	[1]		NA		NA	
	6	210	11930	9890	[1]		NA		NA	
	8	210	11930	9890	[1]		NA		NA	
355 ML_	2	140	5770	5120	[1]		NA		NA	
	4	210	11980	10090	[1]		NA		NA	
	6	210	11980	10090	[1]		NA		NA	
	8	210	11980	10090	[1]		NA		NA	
355 LK_	2	140	5500	5000	[1]		NA		NA	
	4	210	12050	10450	[1]		NA		NA	
	6	210	12050	10450	[1]		NA		NA	
	8	210	12050	10450	[1]		NA		NA	
400 L_	2	170	[1]		[1]		NA		NA	
	4	210	[1]		[1]		NA		NA	
	6	210	[1]		[1]		NA		NA	
	8	210	[1]		[1]		NA		NA	
400 LK_	2	170	[1]		[1]		NA		NA	
	4	210	[1]		[1]		NA		NA	
	6	210	[1]		[1]		NA		NA	
	8	210	[1]		[1]		NA		NA	
450 L_	4	210	[1]		[1]		NA		NA	
	6	210	[1]		[1]		NA		NA	
	8	210	[1]		[1]		NA		NA	

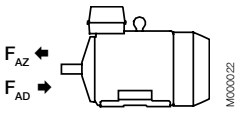
[1] only allowed for direct coupling duty

Axial forces

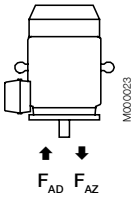
The following tables present permissible axial forces on the shaft in Newtons, assuming zero radial force, a 25 °C ambient temperature, and normal conditions. The values are given for a calculated bearing life of 20,000 and 40,000 hours per motor size.

At 60 Hz, the values must be reduced by 10 percent, and for two-speed motors, the higher speed determines permissible axial force. Permissible loads of simultaneous radial and axial forces can be supplied on request.

For axial force F_{AD}, it is assumed that the D-bearing is locked with a locking ring.



Mounting arrangement IM B3



Mounting arrangement IM V1

Permissible axial forces, motor sizes 80-450

			Mounting arrangement IM B3		Mounting arrangement IM V1	
			Deep groove ball bearings		Deep groove ball bearings	
			L_{10} = 40,000 h		L_{10} = 40,000 h	
Motor size	Poles	Length of shaft extension E (mm)	F_{AD}(N)	F_{AZ}(N)	F_{AD}(N)	F_{AZ}(N)
80	2	40	660	300	690	280
	4	40	820	460	860	440
	6	40	940	580	970	550
	8	40	1030	670	1070	650
90	2	50	740	220	780	190
	4	50	900	380	950	340
	6	50	1010	490	1080	450
	8	50	1110	590	1170	540
100	2	60	1100	220	1180	170
	4	60	1320	430	1430	360
	6	60	1480	590	1600	510
	8	60	1610	720	1730	640
112	2	60	1100	220	1180	170
	4	60	1320	430	1430	360
	6	60	1480	590	1600	510
	8	60	1610	720	1730	640
132	2	80	1530	500	1700	390
	4	80	1870	840	2080	690
	6	80	2110	1080	2380	900
	8	80	2320	1280	2580	1110
160 ML_	2	110	2050	1435	2440	1155
	4	110	2620	2005	3160	1635
	6	110	3055	2440	3590	2060
	8	110	3410	2790	3950	2430
180 ML_	2	110	2570	1470	3075	1100
	4	110	3230	2130	3975	1630
	6	110	3730	2630	4420	2130
	8	110	4140	3040	4890	2550

Motor size	Poles	Length of shaft extension E (mm)	Mounting arrangement IM B3 Deep groove ball bearings L_{10} = 40,000 h		Mounting arrangement IM V1 Deep groove ball bearings L_{10} = 40,000 h	
			F_{AD}(N)	F_{AZ}(N)	F_{AD}(N)	F_{AZ}(N)
200 ML_	2	110	3295	2030	3960	1545
	4	110	4170	2910	5030	2290
	6	110	4800	3535	5820	2780
	8	110	5360	4100	6370	3430
225 SM_	2	110	3710	2240	4515	1650
	4	140	4690	3225	5770	2495
	6	140	5405	3935	6660	3080
	8	140	6010	4540	7280	3700
250 SM_	2	140	5200	2100	6175	1380
	4	140	6400	3310	7645	2410
	6	140	7260	4160	8930	3035
	8	140	8000	4900	9690	3780
280 SM_	2	140	4870	2870	6330	1650
	4	140	6140	4140	7870	2760
	6	140	7040	5040	9150	3515
	8	140	7840	5840	10040	4150
315 SM_	2	140	4780	2780	6620	1270
	4	170	7155	5155	9565	3240
	6	170	8205	6205	11230	3750
	8	170	9180	7180	11935	4780
315 ML_	2	140	4730	2730	7210	940
	4	170	7055	5055	10300	2700
	6	170	8075	6075	12330	3070
	8	170	9060	7070	13310	4210
315 LK_	2	140	4620	2620	7910	320
	4	170	6980	4980	10875	2300
	6	170	7980	5980	13005	2565
	8	170	8900	6900	14100	3450
355 SM_	2	140	1660	5460	4970	2885
	4	210	5760	9390	10890	4840
	6	210	7055	10855	12370	6235
	8	210	8290	12090	14980	7530
355 ML_	2	140	1570	5370	5860	2360
	4	210	5640	9440	11810	5130
	6	210	6870	10670	14718	5215
	8	210	8100	11900	15970	6540
355 LK_	2	140	1440	5240	6600	1630
	4	210	5460	9260	12850	4080
	6	210	6680	10480	15450	4550
	8	210	[1]	[1]	[1]	[1]
400 L, LK_	2	170	810	5810	8010	730
	4	210	4250	10250	13680	3650
	6	210	5410	11410	16610	3840
	8	210	[1]	[1]	18480	4530
450 L_	2	170	-	-	-	-
	4	210	-	-	-	-
	6	210	5630	11630	22090	150
	8	210	6920	12920	23600	1430

[1] On request.

Terminal box
Standard terminal box

Degree of protection and mounting options
The degree of protection for the standard terminal box is IP 55. It complies with the requirements of the type of protection ‘d’ flame proof and prevents the transmission of an internal explosion to the surrounding, potentially explosive atmosphere.

By default, terminal boxes are mounted on top of the motor at D-end. Side mounted terminal box is possible in frame sizes 160 and 180. Mounting at N-end is also possible for the larger frame sizes. Please refer to the variant code section for more details.

Turnability
The standard terminal boxes for motor sizes 80-250 can be turned 4*90°and in sizes 280-450 2*180° after delivery. For sizes 280-450 is also mounting of terminal box with opening towards D or N-end possible using the relevant variant codes when ordering.

Cable entries
Terminal box is provided as standard with tapped holes for cable glands as specified in table below. No cable glands are included as standard, the entry holes are closed with Ex d approved blanking plugs made of brass according table below. One tapped hole for main cables is closed with a plastic plug which is to be used for transport protection only. Different types of cable glands are available as option, suitable for either armoured and non-armoured cables, please refer to the Terminal box alternatives section for more details.

Cable type and terminations
Terminations are suitable for copper and aluminum cables (Al- cables on request for motor sizes 80 to 250). Cables are connected to terminals by cable lugs, which are not included in the delivery.

Earthing bolts
The motors are as standard provided with at least one earthing bolt inside the terminal box and another on the frame. The earthing bolt on the frame is located on top close to the terminal box for easy access from either side of the motor. As an option can also earting bolts on the feet be provided, please refer to variant code section.

Ordering
To ensure the delivery of desired terminations and cable entries for the motor, state the cable type, quantity, size, outer diameter and possibly type of cable glands needed when ordering. Modifying the cable entries on a flame proof terminal box is very difficult afterwards.

See section Variant codes for all options available.

Standard delivery

Standard delivery if no other information is provided. Note: For other network voltages, contact your ABB sales office.

Cable entries for supply cables Motor size	Pole number	Terminal box type	Amount and size of threaded holes	Cable gland	Ex d plug	Max. connectable core cross-section mm²/phase	Number and size of terminal bolts, 6 x
IE2 motors							
80 - 90	2-8	25	1 x M25x1.5	-	-	10	M5
100 - 132	2-8	25	2 x M32x1.5	-	1 x M32	10	M5
160 - 180	2-8	63	2 x M40x1.5	-	1 x M40	1x35	M6
200 - 250	2-8	160	2 x M50x1.5	-	1 x M50	1x70	M10
280 SM_	2-8	210	2 x M63x1.5	-	1 x M63	2x150	M12
315 SM_, ML_	2-8	370	2 x M75x1.5	-	1 x M75	2x240	M12
355 SMA - SMC	2-4	750	2 x M75x1.5	-	1 x M75	4x240	M12
355 SMA, SMB	6-8	370	2 x M75x1.5	-	1 x M75	2x240	M12
355 SMC	6	750	2 x M75x1.5	-	1 x M75	4x240	M12
355 SMC	8	370	2 x M75x1.5	-	1 x M75	2x240	M12
355 ML_, LK_	2-8	750	2 x M75x1.5	-	1 x M75	4x240	M12
400	2-8	750	2 x M75x1.5	-	1 x M75	4x240	M12
450	6-8	750	2 x M75x1.5	-	1 x M75	4x240	M12
IE3 motors							
160 - 180	2-8	63	2 x M40x1.5	-	1 x M40	1x35	M6
200 - 250	2-8	160	2 x M50x1.5	-	1 x M50	1x70	M10
280	2-8	210	2 x M75x1.5	-	1 x M75	2x150	M12
315	2-8	370	2 x M75x1.5	-	1 x M75	2x240	M12
355 SM_	2-4	750	2 x M75x1.5	-	1 x M75	4x240	M12
355 SM_	6	370	2 x M75x1.5	-	1 x M75	2x240	M12
355 ML_, LK_	2-6	750	2 x M75x1.5	-	1 x M75	4x240	M12
Auxiliary cable entries							
80 - 132	2-8		1 x M20x1.5	-	1xM20	1 x 2,5 mm² per terminal	
160-450	2-8		2 x M20x1.5	-	1xM20	1 x 2,5 mm² per terminal	

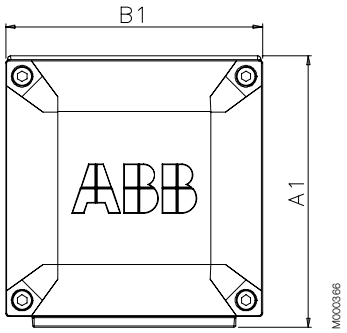
Motor size	Earthing on frame	Earthing in main terminal box
80 - 132	M6	M6
160 – 180	M6	M6
200 - 250	M8	M8
280 - 450	M10	2xM10

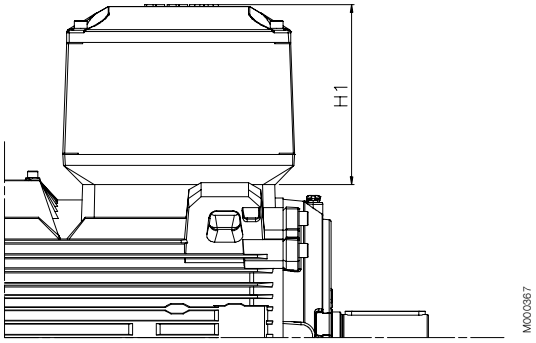
Terminal box
Terminal box dimensions

To match the correct terminal box with motor size, find the motor type and correspondent terminal box type on the previous page. The box types and their dimensions are presented on this page.

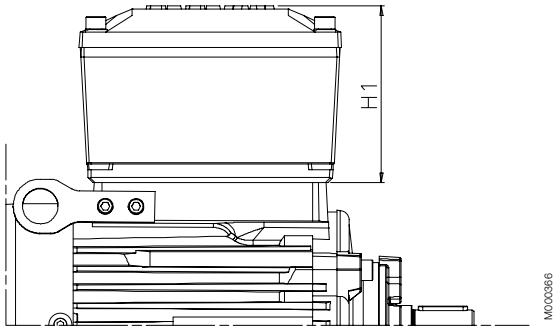
Terminal box types acc. to current capacity	A1	B1	H1
25	192	170	124
63	256	243	174
160	339	290	226
210	465	360	283
370	465	360	283
750	707	467	387

Terminal boxes, standard with 6 terminals

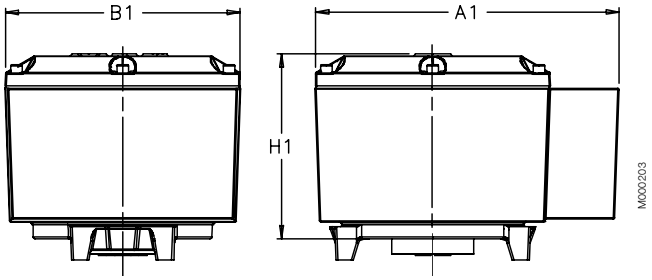




Motor sizes 200 to 250

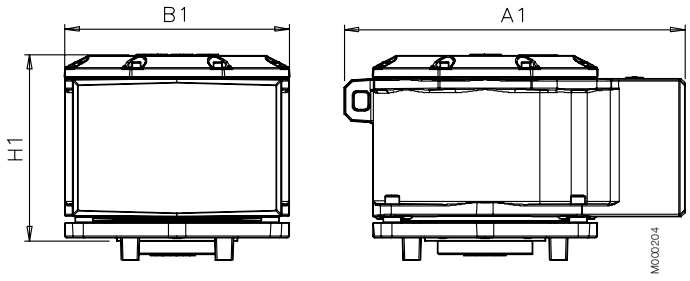


Motor sizes 80 to 132



Motor sizes 280 to 355

Motor sizes 160 to 180

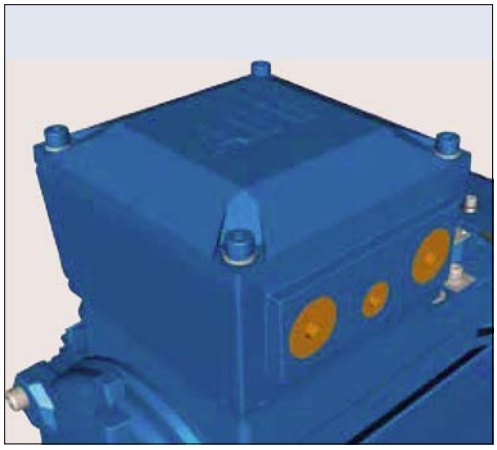


Motor sizes 355 to 450

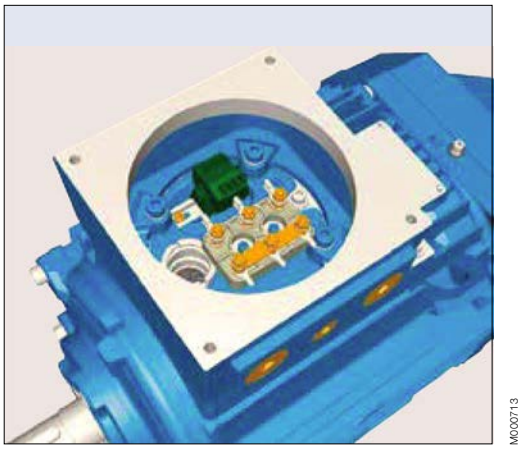
Terminal box
Terminal boxes and boards

The pictures below show standard terminal boxes and the corresponding terminal boards for various motor sizes and terminal box types. To match the correct terminal box with motor size, find the motor type and correspondent terminal box type in table found in section Terminal box – Standard terminal box.

Motor sizes 80-132

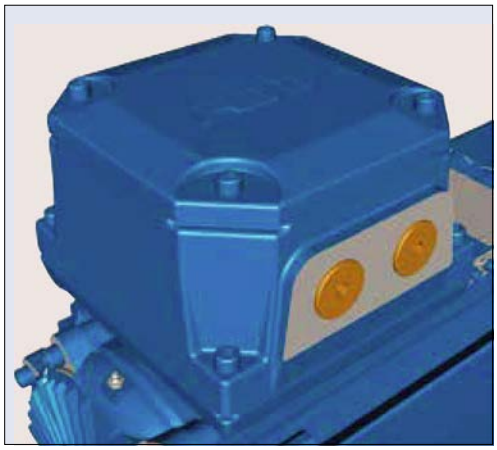


Terminal box for motor sizes 80-132, type 25.

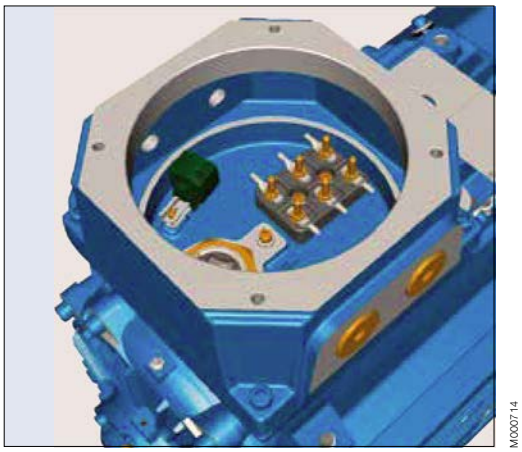


Terminal board for motor sizes 80-132, box type 25.

Motor sizes 160-180

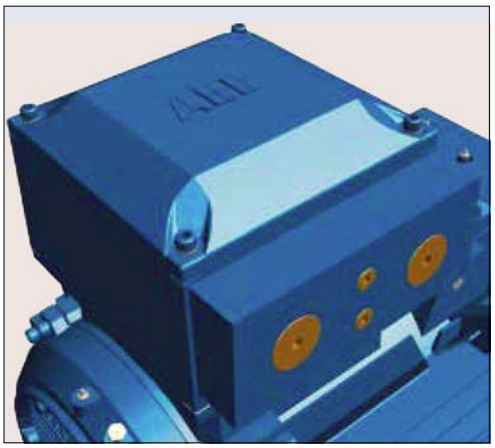


Terminal box for motor sizes 160-180, type 63. Entries for auxiliaries are located on opposite side of terminal box.

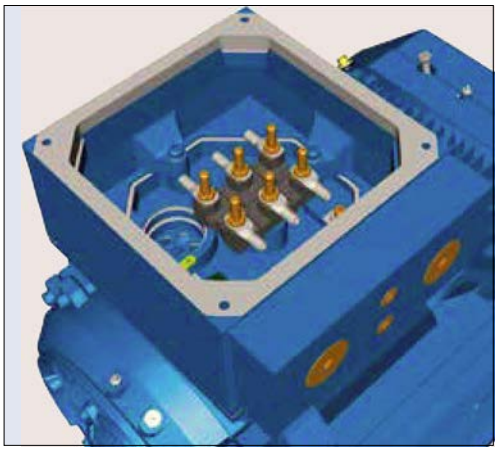


Terminal board for motor sizes 160-180, box type 63.

Motor sizes 200-250

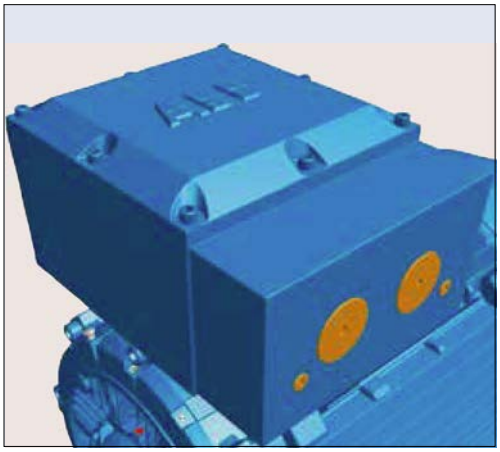


Terminal box for motor sizes 200-250, type 160.

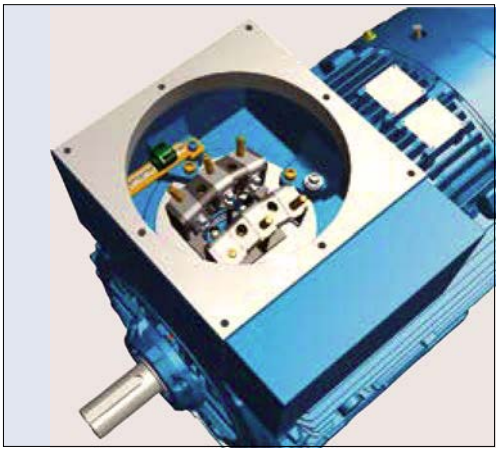


Terminal board for motor sizes 200-250, box type 160.

Motor sizes 280-355

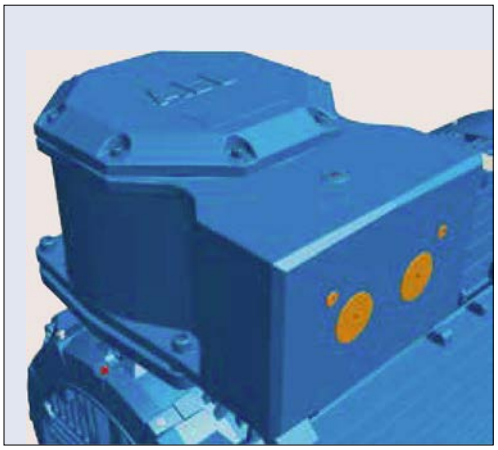


Terminal box for motor sizes 280-355, type 210 and 370.

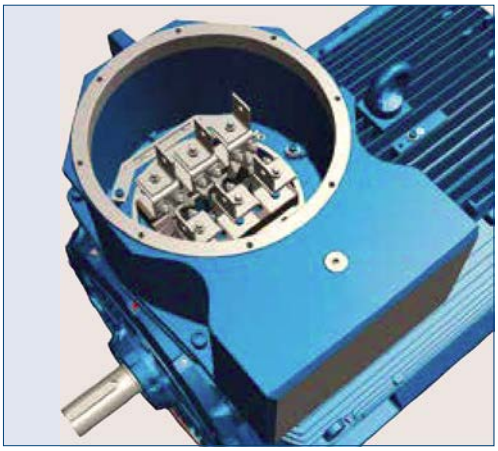


Terminal board 280-355, box type 210 and 370

Motor sizes 355-450



Terminal box for motor sizes 355-450, type 750



Terminal board for motor sizes 355-450, box type 750.

Terminal box
Terminal box alternatives

Due to the construction of the Ex d terminal box is it not possible to mount any connection flanges, angle adapters nor cable sealing units like on motors having increased safety Ex e terminal box.

Cable glands

The motors are delivered as standard with plugged cable entries as described in the previous section. There is a broad selection of different type of cable glands available which are suitable for different types of cable and outer diameter ranges. As it is very difficult to change the amount and size of cable glands afterwards, is it extremely important that these are selected carefully.

Size of threaded opening for cable gland		Cable gland Ex d IIC for armoured cable with double sealing, variant code 734		Cable gland Ex d IIC for non-armoured cable, variant code 735
Metric (std)	NPT (Variant code 730 added)	Cable outer diameter, mm	Inner sheath diameter, mm	Cable outer diameter, mm
M16 x 1.5	-	7-12	4.5-8	-
M20 x 1.5	NPT 1/2"	10-16	6-10	4-8.5
M20 x 1.5 *)	NPT 1/2" *)	-	-	5-12
M25 x 1.5	NPT 3/4"	13.5-19	10-14	9-18
M25 x 1.5 *)	NPT 3/4" *)	19-25	14-18	-
M32 x 1.5	NPT 1"	25-30	18-23	17-26
M40 x 1.5	NPT 1 1/4"	30-36	23-28	22-30
M50 x 1.5	NPT 1 1/2"	36-40	28-32	31-40
M50 x 1.5 *)	NPT 1 1/2" *)	40-46	32-37	-
M63 x 1.5	NPT 2"	46-53	37-43	39-50
M63 x 1.5 *)	NPT 2" *)	53-60	43-50	-
M75 x 1.5	NPT 2 1/2"	58-70	48-60	46-60
M90 x 1.5	NPT 3 1/2"	78-90	68-80	55-70
M100 x 1.5	NPT 4"	88-100	78-90	-

*) = High capacity version, delivered as standard with the variant code.

Threaded openings for cable glands with NPT thread (variant code 730)

The motors are delivered as standard with openings for cable glands with metric threads as listed in the section describing the standard terminal box. If glands with NPT threads will be used must variant code 730 be ordered. If nothing else is stated on the ordered will the sizes in tables below be delivered. If cable glands are also needed must either variant 734 or 735 be added.

Motor frame size	Main cable entries	NPT plug
80-112	1 x ¾"	-
132	2 x ¾"	1 x ¾"
160-180	2 x 1 ¼"	1 x 1 ¼"
200-250	2 x 1 ½"	1 x 1 ½"
280	2 x 2"	1 x 2"
315-450	2 x 3"	1 x 3"

Motor frame size	Cable entries for auxiliaries	NPT plug
80-112	1 x ¾"	-
132	1 x ¾"	1 x ¾"
160-450	2 x ¾"	2 x ¾"

Threaded openings for cable glands of nonstandard size

If the standard size of threaded openings for cable glands does not suit the gland size and cable that will be used can openings of nonstandard size also be delivered, either by fitting a reducers to make the openings smaller or by increasing the amount or size of holes. The maximum possible size and amount for each motor frame size is listed below.

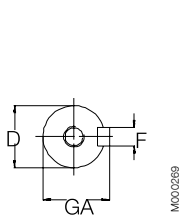
Motor frame size	Main cable entries, metric	Main cable entries, NPT
80-132	1 x M32	1 x 1"
160-180	1 or 2 x M50	1 or 2 x 1 ½"
200-250	1 or 2 x M63	1 or 2 x 2"
280-450	1 or 2 x M75	1 or 2 x 3"

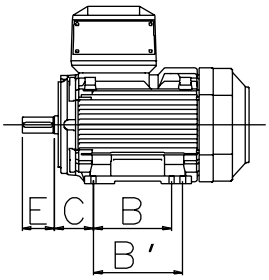
Auxiliary terminal box

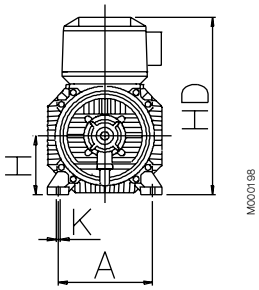
It is possible to equip motors from frame size 160 upwards with one or several auxiliary terminal boxes for connection of auxiliaries like heaters or temperature detectors. The standard auxiliary terminal box is made of cast iron with Ex d type of protection. Connection terminals are of spring-loaded type for quick and easy connection. These are suitable for up to 2.5 mm^2 wires. The auxiliary terminal boxes are equipped with an earthing terminal. The first auxiliary terminal box is located on the right-hand side at D-end as standard. The standard cable entry is 2 x M20 with plugged entries. If cable glands are needed must these be ordered using the variant codes described earlier in this section.

Related variant codes	
380	Separate terminal box for temperature detectors
418	Separate terminal box for auxiliaries
568	Separate terminal box for heating elements

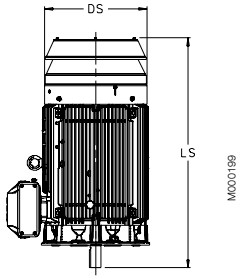
Dimension drawings
Flameproof motors, Ex d



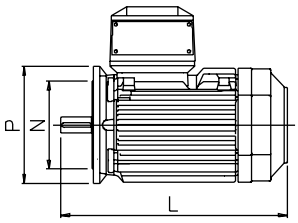




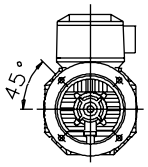
Foot-mounted motor IM 1001, IM B3



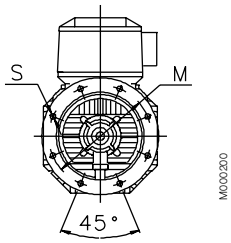
Motor with protection cover



Flange-mounted motor IM 3001, IM B5



Sizes 80 to 200



Sizes 225 to 450

Motor size	IM 1001, IM B3 AND IM 3001, IM B5											IM 1001, IM B3							IM 3001, IM B5				Protective roof		
	D poles		GA poles		F poles		E poles		L max poles		O [2]	A	B	B'	C	HD	K	H	M	N	P	S	DS	LS	
	2	4-8	2	4-8	2	4-8	2	4-8	2	4-8														2	4-8
80	19	19	21.5	21.5	6	6	40	40	340	340	20	125	100	125	50	290	10	80	165	130	200	12	160	360	360
90	24	24	27	27	8	8	50	50	405	405	20	140	100	125	56	315	10	90	165	130	200	12	180	430	430
100	28	28	31	31	8	8	60	60	480	480	25	160	140	–	63	335	10	100	215	180	250	14.5	195	505	505
112	28	28	31	31	8	8	60	60	480	480	25	190	140	–	70	350	12	112	215	180	250	14.5	195	505	505
132	38	38	41	41	10	10	80	80	560	560	30	216	140	178	89	390	12	132	265	230	300	14.5	260	590	590
160	42	42	45	45	12	12	110	110	808	808	45	254	210	254	108	495	14.5	160	300	250	350	18.5	328	852	852
180	48	48	51.5	51.5	14	14	110	110	826	826	50	279	241	279	121	535	14.5	180	300	250	350	18.5	359	876	876
200	55	55	59	59	16	16	110	110	774	774	70	318	267	305	133	616	18.5	200	350	300	400	18.5	414	844	844
200 [3]	55	55	59	59	16	16	110	110	824	824	70	318	267	305	133	616	18.5	200	350	300	400	18.5	414	844	844
225	55	60	59	64	16	18	110	140	841	871	80	356	286	311	149	663	18.5	225	400	350	450	18.5	462	921	951
225 [3]	55	60	59	64	16	18	110	140	871	901	80	356	286	311	149	663	18.5	225	400	350	450	18.5	462	921	951
250	60	65	64	69	18	18	140	140	875	875	90	406	311	349	168	726	24	250	500	450	550	18.5	506	965	965
250 [3]	60	65	64	69	18	18	140	140	895	895	90	406	311	349	168	726	24	250	500	450	550	18.5	506	965	965
280	65	75	69	79.5	18	20	140	140	1090	1090	100	457	368	419	190	862	24	280	500	450	550	18	555	1190	1190
315 SM_	65	80	69	85	18	22	140	170	1176	1206	115	508	406	457	216	929	30	315	600	550	660	23	624	1290	1320
315 ML_	65	90	69	95	18	25	140	170	1287	1317	115	508	457	508	216	929	30	315	600	550	660	23	624	1401	1431
315 LK	65	90	69	95	18	25	140	170	1446	1475	115	590	508	560/710	216	929	28	315	600	550	660	23	624	1552	1589
355 SM_	70	100	74.5	106	20	28	140	210	1409	1479	130	610	500	560	254	1124	35	355	740	680	800	23	590	1480	1550
355 ML_	70	100	74.5	106	20	28	140	210	1514	1584	130	610	560	630	254	1124	35	355	740	680	800	23	590	1530	1600
355 LK_	70	100	74.5	106	20	28	140	210	1764	1834	130	610	630	710	254	1124	35	355	740	680	800	23	590	1635	1705
400 L_	80	110	85	126	22	28	170	210	1851	1891	150	710	900	800	224	1211	35	400	940	880	1000	28	590	1635	1705
400 LK_	80	100	85	106	22	28	170	210	1851	1891	150	686	710	800	280	1211	35	400	740	680	800	23	700	1860	1900
450	-	120 [1]	-	127 [1]	-	32 [1]	-	210 [1]	-	2071 [1]	180	800	1000	1120	250	1328	42	450	1080	1000	1150	28	On request		

[1] Size 450 pole numbers 6-8 [2] Required distance from fan cover air inlet to obstacle behind motor [3] For IE3 version

IM 3601, IM B14 - Available flange alternatives; see also variant codes.

Flange size	Variant code	Flange dimension				Motor size 80-132				
		P	M	N	S	80	90	100	112	132
FT100	258	120	100	80	M6	S	M	NA	NA	NA
FT115	260	140	115	95	M8	M	S	NA	NA	NA
FT130	229	160	130	110	M8	M	M	S	S	NA
FT165	236	200	165	130	M10	M	M	M	M	S
FT215	246	250	215	180	M12	NA	NA	M	M	M
FT265	256	300	265	230	M12	NA	NA	NA	NA	M
FF100	257	120	100	80	Ø7	M	M	NA	NA	NA
FF115	259	140	115	95	Ø10	M	M	NA	NA	NA
FF130	228	160	130	110	Ø10	M	M	M	M	NA
FF165	235	200	165	130	Ø12	S	S	M	M	M
FF215	245	250	215	180	Ø14.5	NA	NA	S	S	M
FF265	255	300	265	230	Ø14.5	NA	NA	NA	NA	S

S = Standard flange M = Modification NA = Not applicable

Tolerances:	
A, B	± 0,8
D, DA	ISO k6 < Ø 50mm
	ISO m6 > Ø 50mm
F, FA	ISO h9
H	-0.5
N	ISO j6
C, CA	± 0.8

In all dimension drawings: The tables give the main dimensions in mm.
For detailed drawings please see our web-pages 'www.abb.com/motors&generators' or contact ABB.

Certificate examples

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx LCI 04.0006X Issue No.:1
Certificate history: Issue No. 1 (2011-11-21) Issue No. 0 (2004-3-26)
Status: Current
Date of Issue: 2011-11-21 Page 1 of 6

Applicant: ABB Oy Motors and Generators
P.O. Box 633
Strömbergin Puistotie 5A
FIN-65101 VAASA
Finland

Electrical Apparatus: Three-phase AC motor - M3JP / M3KP 280
Optional accessory:

Type of Protection: Ex d, Ex de , Ex t

Marking: Ex d or de IIB or IIC T3 to T6 (*) Gb
Ex t IIIA or IIIB or IIIC T...°C (*) Db
IECEx LCI 04.0006X
IP5X, IP54, IP6X or IP64 (*)
(*) = depending on motor type and model as specified in manufacturer specifications.
For complete marking see additional information section

Approved for issue on behalf of the IECEx Certification Body: Michel BRENON
Position: Certification Officer Rémi HANOT
Signature: (for printed version)
Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
Laboratoire Central des Industries Electriques (LCIE)
33 Avenue du General Leclerc
FR-92260 Fontenay-aux-Roses
France

M000726a

1 ATTESTATION D'EXAMEN CE DE TYPE
1 EC TYPE EXAMINATION CERTIFICATE

2 Appareil ou système de protection destiné à être utilisé en atmosphères explosibles (Directive 94/9/CE)
2 Equipment or protective system intended for use in potentially explosive atmospheres (Directive 94/9/EC)

3 Numéro de l'attestation d'examen CE de type
LCIE 11 ATEX 3089 X
3 EC type examination certificate number
LCIE 11 ATEX 3089 X

4 Appareil ou système de protection :
Moteur triphasé à courant alternatif
Type: M3J_280 ..., M3K_280 ...
4 Equipment or protective system :
Three-phase AC motor
Type : M3J_280 ..., M3K_280 ...

5 Demandeur : ABB OY Motors and Generators
Adresse : P.O. Box 633
Strömberg Puistotie 5A
65100 VAASA - FINLAND
5 Applicant : ABB OY Motors and Generators
Address : P.O. Box 633
Strömberg Puistotie 5A
65100 VAASA - FINLAND

6 Fabricant : ABB OY Motors and Generators
Adresse : P.O. Box 633
Strömberg Puistotie 5A
65100 VAASA - FINLAND
6 Manufacturer : ABB OY Motors and Generators
Address : P.O. Box 633
Strömberg Puistotie 5A
65100 VAASA - FINLAND

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.
7 This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

8 Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que cet appareil ou système de protection est conforme aux exigences essentielles de sécurité et de santé pour la conception et la construction d'appareils et de systèmes de protection destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive.
Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 96457-592190-05.
8 LCIE, notified body number 0081 in accordance with article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment or protective system has been found to comply with the essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to this Directive.
The examination and test results are recorded in confidential report N° 96457-592190-05.

9 Le respect des exigences essentielles de sécurité et de santé est assuré par la conformité à :
- EN 60079-0 (2009) - EN 60079-31 (2009)
- EN 60079-1 (2007) - EN 60079-7 (2007)
9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with :
- EN 60079-0 (2009) - EN 60079-31 (2009)
- EN 60079-1 (2007) - EN 60079-7 (2007)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.
10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 Cette attestation d'examen CE de type concerne uniquement la conception et la construction de l'appareil ou du système de protection spécifié, conformément à l'annexe III de la directive 94/9/CE.
Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection. Ces dernières ne sont pas couvertes par la présente attestation.
11 This EC type examination certificate relates only to the design and construction of this specified equipment or protective system in accordance with annex III to the directive 94/9/EC.
Further requirements of the directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 Le marquage de l'appareil ou du système de protection doit comporter les informations détaillées au point 15.
12 The marking of the equipment or protective system shall include information as detailed at 15.

Fontenay Aux Roses
21 NOV. 2011
Responsable de certification ATEX
certification manager
Rémi HANOT

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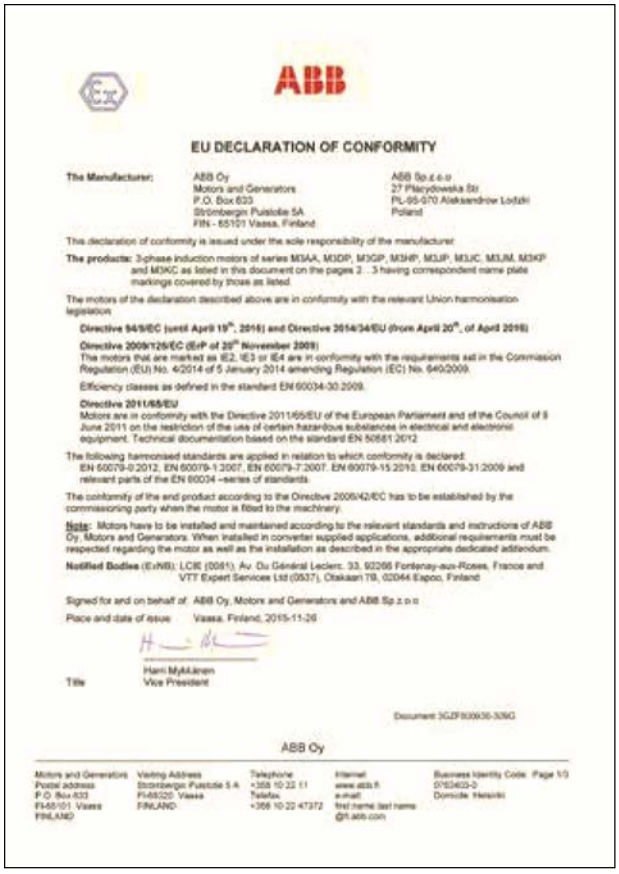

EU DECLARATION OF CONFORMITY

The Manufacturer: ABB Oy
Motors and Generators
P.O. Box 633
Strömbergin Puistotie 5A
FIN - 65101 Vaasa, Finland

ABB Sp.z o.o
27 Placydowska Str
PL-95-070 Aleksandrów Lodzki
Poland

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The products: 3-phase induction motors of series M3AA, M3DP, M3GP, M3HP, M3JP, M3JC, M3JM, M3KP and M3KC as listed in this document on the pages 2 ...3 having correspondent name plate markings covered by those as listed.

The motors of the declaration described above are in conformity with the relevant Union harmonisation legislation:

Directive 94/9/EC (until April 19th, 2016) and Directive 2014/34/EU (from April 20th, of April 2016)

Directive 2009/125/EC (ErP of 20th November 2009)
The motors that are marked as IE2, IE3 or IE4 are in conformity with the requirements set in the Commission Regulation (EU) No. 4/2014 of 5 January 2014 amending Regulation (EC) No. 640/2009.

Efficiency classes as defined in the standard EN 60034-30:2009.

Directive 2011/65/EU
Motors are in conformity with the Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. Technical documentation based on the standard EN 50581:2012.

The following harmonised standards are applied in relation to which conformity is declared:
EN 60079-0:2012, EN 60079-1:2007, EN 60079-7:2007, EN 60079-15:2010, EN 60079-31:2009 and relevant parts of the EN 60034 –series of standards.

The conformity of the end product according to the Directive 2006/42/EC has to be established by the commissioning party when the motor is fitted to the machinery.

Note: Motors have to be installed and maintained according to the relevant standards and instructions of ABB Oy, Motors and Generators. When installed in converter supplied applications, additional requirements must be respected regarding the motor as well as the installation as described in the appropriate dedicated addendum.

Notified Bodies (ExNB): LCIE (0081), Av. Du Général Leclerc, 33, 92260 Fontenay-aux-Roses, France and VTT Expert Services Ltd (0537), Otakaari 19, 02044 Espoo, Finland

Signed for and on behalf of: ABB Oy, Motors and Generators and ABB Sp.z.o.o

Place and date of issue: Vaasa, Finland, 2015-11-26

Harri Mykkänen
Vice President

Title

Document 3GZF500930-309G

ABB Oy

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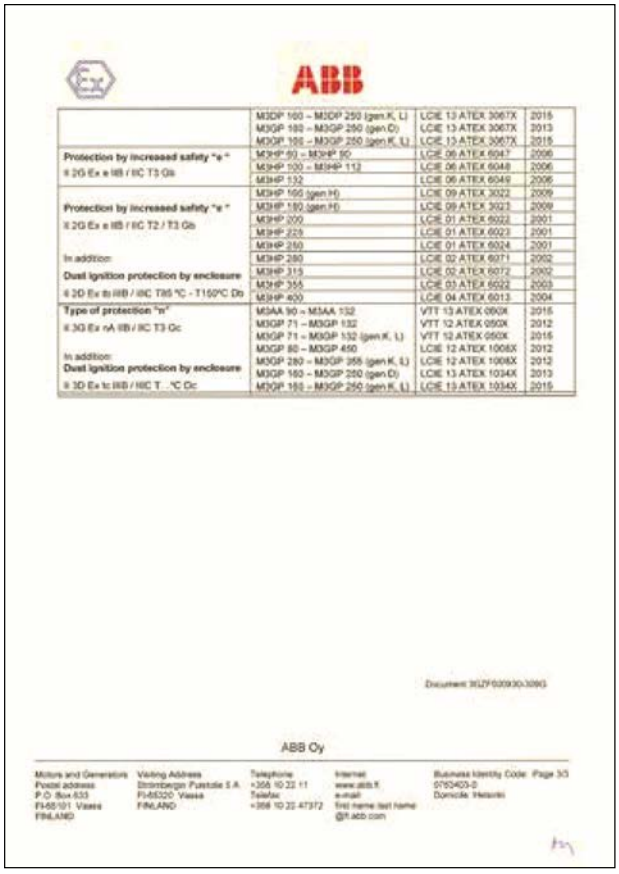
M000725-1



	M3DP 160 – M3DP 250 (gen.K, L) M3GP 160 – M3GP 250 (gen.D) M3DP 160 – M3GP 250 (gen.K, L)	LCIE 13 ATEX 3067X LCIE 13 ATEX 3067X LCIE 13 ATEX 3067X	2015 2013 2015
Protection by increased safety "e" II 2G Ex e IIB / IIC T3 Gb	M3HP 90 – M3HP 90 M3HP 100 – M3HP 112 M3HP 132	LCIE 06 ATEX 6047 LCIE 06 ATEX 6048 LCIE 06 ATEX 6049	2006 2006 2006
Protection by increased safety "e" II 2G Ex e IIB / IIC T2 / T3 Gb	M3HP 160 (gen.H) M3HP 180 (gen.H) M3HP 200 M3HP 225 M3HP 250	LCIE 09 ATEX 3022 LCIE 09 ATEX 3023 LCIE 01 ATEX 6022 LCIE 01 ATEX 6023 LCIE 01 ATEX 6024	2009 2009 2001 2001 2001
In addition: Dust ignition protection by enclosure II 2D Ex tb IIIB / IIIC T85 °C - T150°C Db	M3HP 280 M3HP 315 M3HP 355 M3HP 400	LCIE 02 ATEX 6071 LCIE 02 ATEX 6072 LCIE 03 ATEX 6022 LCIE 04 ATEX 6013	2002 2002 2003 2004
Type of protection "n" II 3G Ex nA IIB / IIC T3 Gc	M3AA 90 – M3AA 132 M3GP 71 – M3GP 132 M3GP 71 – M3GP 132 (gen.K, L)	VTT 13 ATEX 090X VTT 12 ATEX 050X VTT 12 ATEX 050X	2015 2012 2015
In addition: Dust ignition protection by enclosure II 3D Ex tc IIIB / IIIC T ..°C Dc	M3GP 80 – M3GP 450 M3GP 280 – M3GP 355 (gen.K, L) M3GP 160 – M3GP 250 (gen.D) M3GP 160 – M3GP 250 (gen.K, L)	LCIE 12 ATEX 1006X LCIE 12 ATEX 1006X LCIE 13 ATEX 1034X LCIE 13 ATEX 1034X	2012 2012 2013 2015

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M000725-2

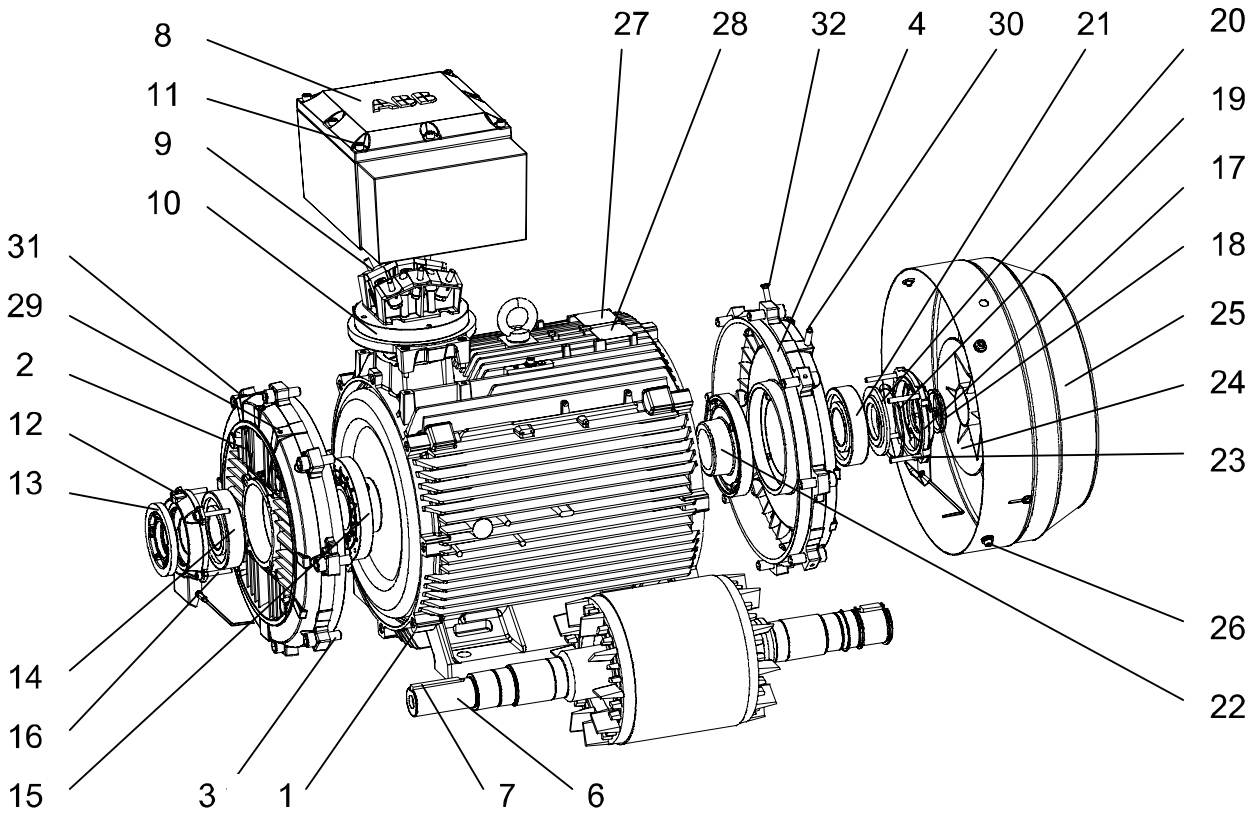
Motors in brief
Flameproof motors Ex d, sizes 80 to 132

Motor size		80	90	100	112	132	160	180
Stator	Material	Cast iron, EN-GJL-200 or better						
	Paint colour shade	Blue, Munsell 8B 4.5/3.25						
	Corrosion class	C3 medium according to ISO/EN 12944-5						
Feet		Forged steel, detachable feet						
Bearing end shields	Material	Cast iron, EN-GJL-200 or better						
	Paint colour shade	Blue, Munsell 8B 4.5/3.25						
	Corrosion class	C3 medium according to ISO/EN 12944-5						
Bearings	D-end 2-12 -pole	6205-2Z/C3	6205-2Z/C3	6206-2Z/C3	6206-2Z/C3	6208-2Z/C3	6309/C3	6310/C3
	N-end 2-12 -pole	6204-2Z/C3	6205-2Z/C3	6206-2Z/C3	6206-2Z/C3	6208-2Z/C3	6309/C3	6310/C3
Axially-locked bearings	Inner bearing cover	As standard, locked at D-end						
Bearing seal		Gamma ring						
Lubrication		Permanent grease lubrication					Regreasable bearings	
SPM-nipples		–					As standard	
Rating plate	Material	Stainless steel						
Terminal box	Frame material	Cast iron, EN-GJL-200 or better						
	Cover material	Cast iron, EN-GJL-200 or better						
	Cover screws material	Acidproof steel A4-80					Steel 8.8, zinc electroplated and chromated.	
Connections	Cable entries	1 x M25 + 1 x M20 plugged		2 x M32 + 1 x M20 plugged			2 x M40 + 2 x M20 plugged	
	Terminals	6 terminals for connection with cable lugs (not included)						
Fan	Material	Polyamide. Reinforced with glass fibre.					Polypropylene. Reinforced with glass fibre.	
Fan cover	Material	Steel				Hot dip galvanized steel		
	Paint colour shade	Blue, Munsell 8B 4.5/3.25						
	Corrosion class	C3 medium according to ISO/EN 12944-5						
Stator winding	Material	Copper						
	Insulation	Insulation class F						
	Winding protection	3 pcs thermistors as standard						
Rotor winding	Material	Pressure die-cast aluminum						
Balancing		Half key balancing						
Key way		Closed						
Heating elements	On request	25 W						
Drain holes		–					Optional	
External earthing bolt		As standard						
Enclosure		IP 55						
Cooling method		IC 411						

Motors in brief
Flameproof motors Ex d, sizes 200 to 450

Motor size			200	225	250	280	315	355	400	450
Stator	Material		Cast iron, EN-GJL-200 or better							
	Paint colour shade		Blue, Munsell 8B 4.5/3.25							
	Corrosion class		C3 medium according to ISO/EN 12944-5							
Feet			Cast iron, EN-GJL-200 or better, integrated with stator							
Bearing end shields	Material		Cast iron, EN-GJL-200 or better							
	Paint colour shade		Blue, Munsell 8B 4.5/3.25							
	Corrosion class		C3 medium according to ISO/EN 12944-5							
Bearings	D-end	2-pole	6312M/C3	6313M/C3	6315M/C3	6316/C3	6316/C3	6316M/C3	6317M/C3	-
		4-12 -pole	6312/C3	6313/C3	6315/C3	6316/C3	6319/C3	6322/C3	6324/C3	6326M/C3
	N-end	2-pole	6310M/C3	6312M/C3	6313M/C3	6316/C3	6316/C3	6316M/C3	6317M/C3	-
		4-12 -pole	6310/C3	6312/C3	6313/C3	6316/C3	6316/C3	6316/C3	6319/C3	6322M/C3
Axially-locked bearings	Inner bearing cover		As standard, locked at D-end							
Bearing seal			Gamma-ring			Labyrinth seal				
Lubrication			Regreasable bearings							
SPM-nipples			As standard							
Rating plate	Material		Stainless steel							
Terminal box	Frame material		Cast iron, EN-GJL-200 or better							
	Cover material		Cast iron, EN-GJL-200 or better							
	Cover screws material		Steel 8.8, zinc electroplated and chromated							
Connections	Cable entries		2 x M50 + 2 x M20 plugged			2 x M63 + 2 x M20 plugged	2 x M75 + 2 x M20 plugged			
	Terminals		6 terminals for connection with cable lugs (not included)							
Fan	Material		Polypropylene. Reinforced with glass fibre.					Polypropylene reinforced with glass fibre or aluminum.		
Fan cover	Material		Hot dip galvanized steel							
	Paint colour shade		Blue, Munsell 8B 4.5/3.25							
	Corrosion class		C3 medium according to ISO/EN 12944-5							
Stator winding	Material		Copper							
	Insulation		Insulation class F							
	Winding protection		3 pcs thermistors as standard							
Rotor winding	Material		Pressure die-cast aluminum							
Balancing			Half key balancing							
Key way			Closed			Open				
Heating elements	On request		25 W	60 W			120 W			200 W
Drain holes			Optional							
External earthing bolt			As standard							
Enclosure			IP 55							
Cooling method			IC 411							

Motor construction
Cast iron flameproof motors, Ex d



1	Stator frame
2	Endshield, D-end
3	Screws for endshield, D-end
4	Endshield, N-end
5	Screws for endshield, N-end
6	Rotor with shaft
7	Key, D-end
8	Terminal box
9	Terminal board
10	Intermediate flange
11	Screws for terminal box cover
12	Outer bearing cover, D-end
13	Valve disc with labyrinth seal, D-end
14	Bearing, D-end
15	Inner bearing cover, D-end
16	Screws for bearing cover, D-end
17	Outer bearing cover, N-end
18	Seal, N-end
19	Wave spring (280-315) Coil spring (355-450)
20	Valve disc, N-end
21	Bearing, N-end
22	Inner bearing cover, N-end
23	Screws for bearing cover, N-end
24	Fan
25	Fan cover
26	Screws for fan cover
27	Rating plate
28	Regreasing plate
29	Grease nipple, D-end
30	Grease nipple, N-end
31	SPM nipple, D-end
32	SPM nipple, N-end