

# Flameproof motors - Variant codes

Code <sup>1)</sup> / Variant	80	90	100	112	132	160	180	200	225	250	280	315	355	400	
<b>Balancing</b>															
052	Vibration acc. to Grade A (IEC 60034-14).														
417	Vibration acc. to Grade B (IEC 60034-14).														
424	Full key balancing.														
<b>Bearings and Lubrication</b>															
036	Transport lock for bearings.														
037	Roller bearing at D-end.														
040	Heat resistant grease.														
041	Bearings regreasable via grease nipples.														
043	SPM nipples.														
058	Angular contact bearing at D-end, shaft force away from bearing.														
107	Pt100 2-wire in bearings.														
130	Pt100 3-wire in bearings.														
194	2Z bearings greased for life at both ends.														
433	Outlet grease collector.														
796	Grease nipples JIS B 1575 PT 1/8 Type A.														
797	Stainless steel SPM Nipples.														
798	Stainless steel grease nipples.														
<b>Brakes</b>															
412	Built-on brake.														
<b>Branch standard designs</b>															
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.														
786	Special design shaft upwards (V3, V36, V6) for outdoor mounting.														
<b>Cooling system</b>															
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	Metal fan.														
075	Cooling method IC418 (without fan).														
183	Separate motor cooling (fan axial, N-end).														
422	Separate motor cooling (fan top or side, N-end).														
791	Stainless steel fan cover.														
<b>Coupling</b>															
035	Assembly of customer supplied coupling-half.														

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<b>Documentation</b>														
141 Binding dimension drawing.	M	M	M	M	M	M	M	M	M	M	M	M	M	M
<b>Drain holes</b>														
448 Draining holes with metal plugs.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
<b>Hazardous Environments</b>														
452 DIP/Ex tD acc. to ATEX directive 94/9/EC , T= 125 °C, cat. 3D, IP55.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
453 DIP/Ex tD acc. to ATEX directive 94/9/EC , T= 125 °C, cat. 2D, IP65.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
454 DIP/Ex tD acc. to ATEX directive 94/9/EC , T= 125 °C, cat. 3D, IP65.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
461 Ex d/Ex de design, Group II C.	M	M	M	M	M	M	M	M	M	M	P	P	P	P
462 Ex d/Ex de design, temperature class T5.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
463 Ex d/Ex de design, temperature class T6.	R	R	R	R	R	R	R	R	R	R	NA	NA	NA	NA
464 Alleinschutz' design. Certification of flame proof motor and protection device together.	P	P	P	P	P	P	P	P	P	P	P	R	NA	NA
812 Explosion protection according to IEC-Standards.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
813 Thermistor-based surface temperature protection T4 for frequency convertor duty.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
814 Ex tD (DIP) motors, temperature class T 150C.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
<b>Heating elements</b>														
450 Heating element, 100-120V.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
451 Heating element, 200-240V.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
<b>Insulation system</b>														
014 Winding insulation class H.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
405 Special winding insulation for frequency converter supply.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
<b>Mounting arrangements</b>														
007 IM 3001 flange mounted, IEC flange, from IM 1001 (B5 from B3).	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
008 IM 2101 foot/flange mounted, IEC flange, from IM 1001 (B34 from B3).	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
009 IM 2001 foot/flange mounted, IEC flange, from IM 1001 (B35 from B3).	M	M	M	M	M	M	M	M	M	M	M	P	P	P
047 IM 3601 flange mounted, IEC flange, from IM 3001 (B14 from B5).	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
093 IM 3601 flange mounted, IEC flange, from IM 1001 (B14 from B3).	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
228 Flange FF 130.	M	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
229 Flange FT 130.	M	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
235 Flange FF 165.	NA	NA	NA	NA	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
236 Flange FT 165.	NA	NA	NA	NA	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
245 Flange FF 215.	NA	NA	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
246 Flange FT 215.	NA	NA	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
255 Flange FF 265.	NA	NA	NA	NA	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
256 Flange FT 265.	NA	NA	NA	NA	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
257 Flange FF 100.	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
258 Flange FT 100.	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
259 Flange FF 115.	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
260 Flange FT 115.	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
305 Additional lifting lugs.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	P	P	P
306 IM 1001 foot mounted, from IM 3601 (B3 from B14).	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
309 IM 1001 foot mounted, from IM 3001 (B3 from B5).	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
311 IM 2001 foot/flange mounted, IEC flange, from IM 3001 (B35 from B5).	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA

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<b>Painting</b>														
106	Paint thickness = 80 µm.	S	S	S	S	S	S	S	S	S	S	S	S	S
109	Paint thickness = 120 µm.	M	M	M	M	M	M	M	M	M	M	P	P	P
110	Paint thickness = 160 µm.	M	M	M	M	M	M	M	M	M	M	P	P	P
111	Offshore two-pack polyamide cured epoxy paint 160 µm.	M	M	M	M	M	M	M	M	M	M	P	P	P
114	Special paint colour, standard grade.	M	M	M	M	M	M	M	M	M	M	P	P	P
115	Offshore zink primer painting.	P	P	P	P	P	P	P	P	P	P	P	P	P
179	Special paint specification.	R	R	R	R	R	R	R	R	R	R	R	R	R
<b>Protection</b>														
005	Metal protective roof, vertical motor, shaft down.	M	M	M	M	M	M	M	M	M	M	P	P	P
072	Radial seal at D-end.	M	M	M	M	M	M	M	M	M	M	P	P	NA NA
073	Sealed against oil at D-end.	P	P	P	P	P	P	P	P	P	P	P	P	P
158	Degree of protection IP65.	P	M	M	M	M	M	M	M	M	M	P	P	P
211	Weather protected, IP xx W.	R	R	R	R	R	R	R	R	R	R	R	R	R
403	Degree of protection IP56.	M	M	M	M	M	M	M	M	M	M	P	P	P
404	Degree of protection IP56, without fan and fan cover.	NA	NA	NA	NA	NA	R	R	R	R	R	R	NA	NA
434	Degree of protection IP56, open deck.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P
783	Labyrinth sealing at D-end.	P	P	P	P	P	P	P	P	P	P	P	S	S
<b>Rating &amp; instruction plates</b>														
002	Restamping voltage, frequency and output, continuous duty.	M	M	M	M	M	M	M	M	M	M	P	P	P
095	Restamping output (maintained voltage, frequency), intermittent duty.	M	M	M	M	M	M	M	M	M	M	P	P	P
135	Mounting of additional identification plate, stainless.	M	M	M	M	M	M	M	M	M	M	P	P	P
139	Additional identification plate delivered loose.	M	M	M	M	M	M	M	M	M	M	P	P	P
161	Additional rating plate delivered loose.	M	M	M	M	M	M	M	M	M	M	P	P	P
163	Frequency converter rating plate. Rating data according to quotation.	M	M	M	M	M	M	M	M	M	M	P	P	P
<b>Shaft &amp; rotor</b>														
069	Two shaft extensions as per basic catalogue.	R	R	R	R	R	P	P	P	P	P	P	P	P
070	One or two special shaft extensions, standard shaft material.	P	P	P	P	P	P	P	P	P	P	P	P	P
164	Shaft extension with closed key-way.	S	S	S	S	S	S	S	S	S	P	P	P	P
165	Shaft extension with open key-way.	P	P	P	P	P	P	P	P	P	S	S	S	S
410	Stainless steel shaft (standard or non-standard design).	R	R	R	R	R	R	R	R	R	P	P	P	P
<b>Standards and Regulations</b>														
421	VIK design (Verband der industriellen Energie- und Kraftwirtschaft e.V.).	M	M	M	M	M	M	M	M	M	M	P	P	P
758	Saudi Aramco design.	P	P	P	P	P	P	P	P	P	P	P	P	R
773	EEMUA No 132 1988 design	P	P	P	P	P	P	P	R	R	R	R	R	R
774	Design according to NORSOK (Norwegian Territorial Waters).	P	P	P	P	P	P	P	P	P	P	P	P	P
775	Design according to SHELL DEP 33.66.05.31-Gen. January 1999 design.	M	M	M	M	M	M	M	M	M	P	P	P	P
778	GOST Export/Import Certificate (Russia).	M	M	M	M	M	M	M	M	M	P	P	P	P
779	SASO Export/Import Certificate (Saudi Arabia).	M	M	M	M	M	M	M	M	M	P	P	P	P
782	Fulfilling CQST Certification requirements (China).	M	M	M	M	M	M	M	M	M	P	P	P	P,R
<b>Stator winding temperature sensors</b>														
120	KTY 84-130 (1 per phase) in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P
121	Bimetal detectors, break type (NCC), (3 in series), 130°C, in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P
122	Bimetal detectors, break type (NCC), (3 in series), 150°C, in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P

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125 Bimetal detectors, break type (NCC), (2x3 in series), 150°C, in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
127 Bimetal detectors, break type (NCC), (3 in series, 130°C & 3 in series, 150°C), in stator winding.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
435 PTC - thermistors (3 in series), 130°C, in stator winding.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
436 PTC - thermistors (3 in series), 150°C, in stator winding.	S	S	S	S	S	S	S	S	S	S	S	S	S	S
437 PTC - thermistors (3 in series), 170°C, in stator winding.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
438 PTC -thermistors (3 in series), 190°C, in stator winding.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
439 PTC - thermistors (2x3 in series), 150°C, in stator winding.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
441 PTC - thermistors (3 in series, 130°C & 3 in series, 150°C), in stator winding.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
445 Pt-100 2-wire in stator winding, 1 per phase.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
446 Pt-100 2-wire in stator winding, 2 per phase.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
502 Pt-100 3-wire in stator winding, 1 per phase.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
503 Pt-100 3-wire in stator winding, 2 per phase.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
<b>Terminal box</b>														
022 Cable entry LHS (seen from D-end).	M	M	M	M	M	M	M	M	M	M	M	P	P	P
137 Extended cable connection, low terminal box, "Flying leads". Only Ex de motors.	NA	NA	NA	NA	NA	P	P	P	P	P	NA	NA	NA	NA
157 Terminal box degree of protection IP65.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
187 Cable glands of non-standard design.	NA	NA	NA	NA	NA	R	R	R	R	R	R	R	R	R
380 Separate terminal box for temperature detectors, std. Material.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
400 4 x 90 degr turnable terminal box. Ex de sizes 160-280 = M, Ex d = S	S	S	S	S	S	M	M	S	S	S	S	S	S	S
402 Terminal box adapted for Al cables.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	S	S	S	S
413 Extended cable connection, no terminal box.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	P	P	P	P
418 Separate terminal box for auxiliaries, std. Material.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
465 Terminal box on top.	S	S	S	S	S	S	S	S	S	S	S	S	S	S
466 Terminal box at N-end.	NA	NA	NA	NA	NA	R	R	P	P	P	P	P	P	P
468 Cable entry from D-end.	M	M	M	M	M	M	M	M	M	M	P	P	P	P
469 Cable entry from N-end.	M	M	M	M	M	M	M	M	M	M	P	P	P	P
567 Separate terminal box material: Cast Iron. As standard by Ex d motors.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
568 Separate terminal box for heating elements, std. Material.	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
569 Separate terminal box for brakes	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
728 Standard cable gland, EEx d IIB, armoured cable, double sealing.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
730 Prepared for NPT cable glands.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
732 Standard cable gland, EEx d IIB, armoured cable.	M	M	M	M	M	M	M	M	M	M	P	P	P	P
733 Standard cable gland, EEx d IIB, non-armoured cable.	M	M	M	M	M	M	M	M	M	M	P	P	P	P
734 Standard cable gland, EEx d IIC, armoured cable.	M	M	M	M	M	M	M	M	M	M	P	P	P	P
735 Standard cable gland, EEx d IIC, non-armoured cable.	M	M	M	M	M	M	M	M	M	M	P	P	P	P
736 Standard cable gland EEx e acc. to EN-Standards. Ex de motors only.	S	S	S	S	S	S	S	S	S	S	S	S	S	S
737 Standard cable gland EEx e with clamping device acc. to EN-Standards. Ex de only.	P	P	P	P	P	P	P	P	P	P	P	P	P	P

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743 Painted flange for cable glands. Ex de only.	M	M	M	M	M	M	M	M	M	M	P	P	P	P
744 Stainless steel flange for cable glands. Ex de only.	M	M	M	M	M	M	M	M	M	M	P	P	P	P
745 Painted steel flange equipped with brass cable glands. Ex de only.	M	M	M	M	M	M	M	M	M	M	P	P	P	P
746 Stainless steel cable flange equipped with standard brass cable glands. Ex de only.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
<b>Testing</b>														
145 Type test report from a catalogue motor, 400V 50Hz.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
146 Type test with report for motor from specific delivery batch.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
148 Routine test report.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
150 Customer witnessed testing. Specify test procedure with other codes.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
221 Type test and multi-point load test with report for motor from specific delivery batch.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
222 Torque/speed curve, type test and multi-point load test with report for motor from specific delivery batch.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
760 Vibration level test.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
761 Vibration spectrum test.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
762 Noise level test.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
763 Noise spectrum test.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
764 Test with ABB frequency converter available at ABB test field. ABB standard test procedure.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
<b>Variable speed drives</b>														
163 Frequency converter rating plate. Rating data according to quotation.	M	M	M	M	M	M	M	M	M	M	M	P	P	P
181 Rating plate with ABB standard loadability values for VSD operation. Other auxiliaries for VSD operation to be selected as necessary.	S	S	S	S	S	S	S	S	S	S	S	P	P	P
405 Special winding insulation for frequency converter supply.	P	P	P	P	P	P	P	P	P	P	P	P	P	P
new Separate motor cooling (fan axial, N-end) and Ex d, tD pulse tacho, 1024 pulses, L&L 841.	NA	NA	NA	NA	NA	R	R	R	R	R	R	R	R	R
new Separate motor cooling (fan axial, N-end) and Ex d, tD pulse tacho, 1024 pulses, L&L 841.	NA	NA	NA	NA	NA	R	R	R	R	R	R	R	R	R
680 2048 pulse tacho, Ex d, tD, L&L 841910001	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
701 Insulated bearing at N-end.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	M	P	P	P
704 EMC cable gland.	R	R	R	R	R	R	R	R	R	R	R	R	R	R
747 1024 pulse tacho, Ex d, tD, L&L 841910002	NA	NA	NA	NA	NA	P	P	P	P	P	P	P	P	P
<b>Y/D starting</b>														
117 Terminals for Y/D start at both speeds (two speed windings).	NA	NA	NA	NA	NA	R	R	R	R	R	P	P	R	R
118 Terminals for Y/D start at high speed (two speed windings).	NA	NA	NA	NA	NA	R	R	R	R	R	P	P	R	R
119 Terminals for Y/D start at low speed (two speed windings).	NA	NA	NA	NA	NA	R	R	R	R	R	P	P	R	R

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