

# Industrial performance aluminum motors - variant codes

Code <sup>1)</sup>	Variant code	Frame Size												
		63	71	80	90	100	112	132	160	180	200	225	250	280
<b>Balancing</b>														
417	Vibration acc. to Grade B (IEC 60034-14).	NA	NA	NA	P	P	P	P	NA	NA	NA	NA	NA	NA
423	Balanced without key.	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
424	Full key balancing.	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
<b>Bearings and Lubrication</b>														
036	Transport lock for bearings.	NA	NA	NA	M	M	M	M	M	M	M	M	M	M
037	Roller bearing at D-end.	NA	NA	NA	P	P	P	P	M	M	M	M	M	M
039	Cold resistant grease.	M	M	M	M	M	M	M	R	R	R	R	R	R
040	Heat resistant grease.	M	M	M	M	M	M	M	R	R	R	R	R	R
041	Bearings regreasable via grease nipples.	NA	NA	NA	P	P	P	P	M	M	M	M	M	S
042	Locked drive-end.	S	S	S	S	S	S	S	S	S	S	S	S	S
043	SPM nipples.	NA	NA	NA	R	R	R	R	M	M	M	M	M	M
057	2RS bearings at both ends.	M	M	M	M	M	M	M	M	M	M	M	M	M
058	Angular contact bearing at D-end, shaft force away from bearing.	NA	NA	NA	M	M	M	M	M	M	M	M	M	M
059	Angular contact bearing at N-end, shaft force towards bearing.	NA	NA	NA	M	M	M	M	M	M	M	M	M	M
188	63-series bearings.	NA	NA	NA	M	S	S	M	S	S	S	S	S	S
796	Grease nipples JIS B 1575 PT 1/8 Type A	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
797	Stainless steel SPM Nipples	NA	NA	NA	R	R	R	R	M	M	M	M	M	M
798	Stainless steel grease nipples	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
<b>Branch standard designs</b>														
071	Cooling Tower duty	NA	NA	NA	NA	NA	NA	NA	P	P	P	P	P	P
079	Silumin-alloy rotor cage.	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
142	“Manilla connection”.	P	P	P	P	P	P	P	P	P	P	P	P	P
178	Stainless steel / acid proof bolts.	M	M	M	M	M	M	M	M	M	M	M	M	M
209	Non-standard voltage or frequency, (special winding).	P	P	P	P	P	P	P	P	P	P	P	P	P
217	Cast iron D-end shield (on aluminum motor).	NA	NA	NA	M	M	M	M	S	S	S	S	S	S
425	Corrosion protected stator and rotor core.	P	P	P	P	P	P	P	P	P	P	P	P	P
<b>Cooling system</b>														
053	Metal fan cover.	M	M	M	M	M	M	M	S	S	S	S	S	S
068	Light alloy metal fan	R	M	M	M	M	M	M	M	M	M	M	M	M
075	Cooling method IC418 (without fan).	P	P	P	P	P	P	P	M	M	M	M	M	M
183	Separate motor cooling (fan axial, N-end).	NA	M	M	M	M	M	P	M	M	M	M	M	M
189	Separate motor cooling, IP44, 400V, 50Hz (fan axial, N-end).	NA	NA	NA	NA	NA	NA	P	M	M	M	M	M	M
794	Fan for reduced noise level (4-p fan).	NA	NA	NA	NA	NA	NA	NA	R	R	R	R	R	R
<b>Coupling</b>														
035	Assembly of customer supplied coupling-half	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	M
<b>Documentation</b>														
141	Binding dimension drawing.	R	R	R	R	R	R	R	M	M	M	M	M	M
<b>Drain holes</b>														
065	Plugged existing drain holes.	M	M	M	M	M	M	M	M	M	M	M	M	M

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		63	71	80	90	100	112	132	160	180	200	225	250	280
<b>Earthing Bolt</b>														
067	External earthing bolt.	M	M	M	M	M	M	M	M	M	M	M	M	M
<b>Hazardous Environments</b>														
See catalogue "Motors for Hazardous Environments" for details.														
<b>Heating elements</b>														
450	Heating element, 100-120V.	M	M	M	M	M	M	M	M	M	M	M	M	M
451	Heating element, 200-240V.	M	M	M	M	M	M	M	M	M	M	M	M	M
<b>Insulation system</b>														
014	Winding insulation class H.	P	P	P	P	P	P	P	P	P	P	P	P	P
405	Special winding insulation for frequency converter supply.	R	R	R	R	R	R	R	P	P	P	P	P	P
406	Winding for supply >690<=1000 Volts.	NA	NA	NA	NA	NA	NA	NA	NA	NA	P	P	P	P
<b>Marine motors</b>														
See catalogue "Marine Motors" for details.														
<b>Mounting arrangements</b>														
007	IM 3001 flange mounted, IEC flange, from IM 1001 (B5 from B3).	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
008	IM 2101 foot/flange mounted, IEC flange, from IM 1001 (B34 from B3).	M	M	M	M	M	M	M	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	M	M
047	IM 3601 flange mounted, IEC flange, from IM 3001 (B14 from B5).	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
048	IM 3001 flange mounted, IEC flange, from IM 3601 (B5 from B14).	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
066	Modified for non-standard mounting position. Specify IM xxxx. Use for all mounting arrangements excluding IM B3 (1001) and IM B5 (3001).	M	M	M	M	M	M	M	M	M	M	M	M	M
116	Special flange	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA
200	Flange ring holder.	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
218	Flange ring FT 85.	NA	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
219	Flange ring FT 100.	NA	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
220	Flange ring FF 100.	NA	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
223	Flange ring FF 115.	NA	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
224	Flange ring FT 115.	NA	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
226	Flange ring FF 130.	NA	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA
227	Flange ring FT 130.	NA	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA
229	Flange FT 130.	NA	NA	NA	NA	M	M	NA	NA	NA	NA	NA	NA	NA
233	Flange ring FF 165.	NA	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA
234	Flange ring FT 165.	NA	M	M	M	M	M	NA	NA	NA	NA	NA	NA	NA
235	Flange FF 165.	NA	NA	NA	M	NA	NA	NA	NA	NA	NA	NA	NA	NA
236	Flange FT 165.	NA	NA	NA	NA	NA	NA	M	NA	NA	NA	NA	NA	NA
243	Flange ring FF 215.	NA	NA	NA	NA	M	M	M	NA	NA	NA	NA	NA	NA
244	Flange ring FT 215.	NA	NA	NA	NA	M	M	M	NA	NA	NA	NA	NA	NA
245	Flange FF 215.	NA	NA	NA	NA	M	M	NA	NA	NA	NA	NA	NA	NA
253	Flange ring FF 265.	NA	NA	NA	NA	NA	NA	M	NA	NA	NA	NA	NA	NA
254	Flange ring FT 265.	NA	NA	NA	NA	NA	NA	M	NA	NA	NA	NA	NA	NA

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255	Flange FF 265.	NA	NA	NA	NA	NA	NA	M	NA	NA	NA	NA	NA	NA
306	IM 1001 foot mounted, from IM 3601 (B3 from B14).	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
307	IM 2101 foot/flange mounted, IEC flange, from IM 3601 (B34 from B14).	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
308	IM 2001 foot/flange mounted, IEC flange, from IM 3601 (B35 from B14).	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
309	IM 1001 foot mounted, from IM 3001 (B3 from B5).	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
310	IM 2101 foot/flange mounted, IEC flange, from IM 3001 (B34 from B5).	M	M	M	M	M	M	M	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	M	M	NA	NA	NA	NA	NA	NA
312	IM 1001 foot mounted, from IM 2101 (B3 from B34).	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
315	IM 2001 foot/flange mounted, IEC flange, from IM 2101 (B35 from B34).	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
316	IM 1001 foot mounted, from IM 2001 (B3 from B35).	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
319	IM 2101 foot/flange mounted, IEC flange, from IM 2001 (B34 from B35).	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA

### Painting

114	Special paint colour, standard grade.	P	P	P	P	P	P	P	M	M	M	M	M	M
179	Special paint specification.	R	R	R	R	R	R	R	R	R	R	R	R	R

### Protection

005	Metal protective roof, vertical motor, shaft down.	M	M	M	M	M	M	M	M	M	M	M	M	M
072	Radial seal at D-end.	M	M	M	M	M	M	M	M	M	M	M	M	M
073	Sealed against oil at D-end	M	M	M	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
158	Degree of protection IP65.	M	M	M	M	M	M	M	M	M	M	M	M	M
211	Weather protected, IP xx W	NA	NA	NA	P	P	P	P	M	M	M	M	M	M
403	Degree of protection IP56.	M	M	M	M	M	M	M	M	M	M	M	M	M
404	Degree of protection IP56, without fan and fan cover.	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
784	Gamma-seal at D-end.	NA	NA	NA	P	P	P	P	M	M	M	M	M	M

### Rating & instruction plates

002	Restamping voltage, frequency and output, continuous duty.	M	M	M	M	M	M	M	M	M	M	M	M	M
003	Individual serial number.	M	M	M	M	M	M	M	S	S	S	S	S	S
004	Additional text on std rating plate (max 12 digits on free text line).	NA	NA	NA	NA	NA	M	M	M	M	M	M	M	M
095	Restamping output (maintained voltage, frequency), intermittent duty.	M	M	M	M	M	M	M	M	M	M	M	M	M
098	Stainless rating plate.	M	M	M	M	M	M	M	M	M	M	M	M	M
135	Mounting of additional identification plate, stainless.	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
138	Mounting of additional identification plate, aluminium.	M	M	M	M	M	M	M	M	M	M	M	M	M
139	Additional identification plate delivered loose.	M	M	M	M	M	M	M	M	M	M	M	M	M
160	Additional rating plate affixed.	P	P	P	M	M	M	M	M	M	M	M	M	M
161	Additional rating plate delivered loose.	M	M	M	M	M	M	M	M	M	M	M	M	M
162	Rating plate fixed to stator.	NA	NA	NA	NA	NA	NA	M	S	S	S	S	S	S

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		63	71	80	90	100	112	132	160	180	200	225	250	280
163	Frequency converter rating plate. Rating data according to quotation.	R	R	R	R	R	R	R	M	M	M	M	M	M
198	Aluminum rating plate	S	S	S	S	S	S	M	S	S	S	S	S	S

### Shaft & rotor

069	Two shaft extensions as per basic catalogue.	P	P	P	P	P	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	R	R	R	R	R	R
131	Motor delivered with half key (Key not exceeding shaft diameter)	P	P	P	P	P	P	M	M	M	M	M	M	M
155	Cylindrical shaft extension, D-end, without key-way	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
156	Cylindrical shaft extension, N-end, without key-way	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
165	Shaft extension with open key-way.	P	P	P	P	P	P	P	P	P	P	P	P	P
410	Stainless steel shaft (standard or non-standard design).	P	P	P	P	P	P	P	P	P	P	P	P	P

### Standards and Regulations

010	Fulfilling CSA Safety Certificate.	P	P	P	P	P	P	NA	M	M	M	M	M	M
011	Fulfilling CSA Energy Efficiency Verification (code 010 included).	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
029	Fulfilling Underwriters Laboratory (UL) requirements.	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA	NA
154	Fulfilling requirements of specified classification society (certificate).	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA
408	Fulfilling EPAAct certification requirements, CC031A	NA	NA	NA	R	R	NA	NA	NA	NA	NA	NA	NA	NA
481	Fulfilling Nippon Kaiji Kyokai (NK) requirements, with certificate	P	P	P	M	M	M	M	M	M	M	M	M	M
483	Fulfilling China Classification Societies (CCS) requirements (Beijing), with certificate	P	P	M	M	M	P	P	M	M	M	M	M	M
499	Fulfilling Inspección de Buques requirements	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
540	China energy label	NA	NA	NA	NA	NA	NA	NA	R	R	R	R	R	R
778	GOST Export/Import Certificate (Russia).	NA	NA	NA	M	M	M	M	M	M	M	M	M	M
779	SASO Export/Import Certificate (Saudi Arabia)	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M

### Stator winding temperature sensors

121	Bimetal detectors, break type (NCC), (3 in series), 130°C, in stator winding.	M	M	M	M	M	M	M	M	M	M	M	M	M
122	Bimetal detectors, break type (NCC), (3 in series), 150°C, in stator winding.	M	M	M	M	M	M	M	M	M	M	M	M	M
123	Bimetal detectors, break type (NCC), (3 in series), 170°C, in stator winding.	P	P	P	P	P	P	P	M	M	M	M	M	M
124	Bimetal detectors, break type (NCC), (3 in series), 140°C, in stator winding.	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
125	Bimetal detectors, break type (NCC), (2x3 in series), 150°C, in stator winding.	P	P	P	M	M	P	P	M	M	M	M	M	M
127	Bimetal detectors, break type (NCC), (3 in series, 130°C & 3 in series, 150°C), in stator winding.	P	P	P	M	M	P	P	M	M	M	M	M	M
321	Bimetal detectors, closing type (NO), (3 in parallel), 130°C, in stator winding.	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
322	Bimetal detectors, closing type (NO), (3 in parallel), 150°C, in stator winding.	M	M	M	P	P	P	P	NA	NA	NA	NA	NA	NA
323	Bimetal detectors, closing type (NO), (3 in parallel), 170°C, in stator winding.	R	R	R	P	P	P	P	NA	NA	NA	NA	NA	NA

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325	Bimetal detectors, closing type (NO), (2x3 in parallel), 150°C, in stator winding.	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
327	Bimetal detectors, closing type (NO), (3 in parallel, 130°C & 3 in parallel, 150°C), in stator winding.	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
435	PTC - thermistors (3 in series), 130°C, in stator winding.	M	M	M	M	M	M	M	M	M	M	M	M	M
436	PTC - thermistors (3 in series), 150°C, in stator winding.	M	M	M	M	M	M	M	S	S	S	S	S	S
437	PTC - thermistors (3 in series), 170°C, in stator winding.	P	P	P	P	P	P	P	M	M	M	M	M	M
439	PTC - thermistors (2x3 in series), 150°C, in stator winding.	M	M	M	M	M	M	M	M	M	M	M	M	M
440	PTC - thermistors (3 in series, 110°C & 3 in series, 130°C), in stator winding.	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
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	M	M
442	PTC - thermistors (3 in series, 150°C & 3 in series, 170°C), in stator winding.	P	P	P	P	P	P	P	M	M	M	M	M	M
445	Pt-100 2-wire in stator winding, 1 per phase	R	R	R	R	R	R	R	M	M	M	M	M	M
446	Pt-100 2-wire in stator winding, 2 per phase	R	R	R	R	R	R	R	M	M	M	M	M	M

### Terminal box

015	Motor supplied in D connection.	P	P	P	P	P	P	P	M	M	M	M	M	M
016	9 terminals in terminal box	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
017	Motor supplied in Y connection.	P	P	P	P	P	P	P	M	M	M	M	M	M
018	D connection in terminal box (reconnection from Y), single phase Steinmetz.	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA
019	Larger than standard terminal box.	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
021	Terminal box LHS (seen from D-end).	NA	NA	NA	NA	NA	NA	NA	NA	NA	P	P	P	P
112	Mounting of plug-in contact.	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
136	Extended cable connection, standard terminal box.	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA
137	Extended cable connection, low terminal box, "Flying leads".	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA
187	Cable glands of non-standard design	M	M	M	M	M	M	M	NA	NA	NA	NA	NA	NA
180	Terminal box RHS (seen from D-end).	M	M	M	M	M	M	M	NA	NA	P	P	P	P
230	Standard metal cable glands.	M	M	M	M	M	M	M	M	M	M	M	M	M
375	Standard plastic cable gland	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA
376	Two standard plastic cable glands	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA
418	Separate terminal box for auxiliaries, standard material.	R	R	R	R	R	R	R	M	M	M	M	M	M
467	Lower than standard terminal box and rubber extended cable. Cable length 2m.	M	M	M	M	M	M	M	P	P	P	P	P	P
730	Prepared for NPT cable glands	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA
731	Two standard metal cable glands.	M	M	M	M	M	M	M	M	M	M	M	M	M

### Testing

140	Test confirmation.	P	P	P	P	P	P	P	M	M	M	M	M	M
145	Type test report from a catalogue motor, 400V 50Hz.	M	M	M	M	M	M	M	M	M	M	M	M	M
146	Type test with report for motor from specific delivery batch.	P	M	M	M	M	M	M	M	M	M	M	M	M
147	Type test with report for motor from specific delivery batch, customer witnessed.	P	M	M	M	M	M	M	M	M	M	M	M	M

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148	Routine test report.	M	M	M	M	M	M	M	M	M	M	M	M	M
149	Test according to separate test specification.	R	R	R	R	R	R	R	NA	NA	NA	NA	NA	NA
153	Reduced test for classification society.	P	P	P	M	M	M	M	M	M	M	M	M	M
221	Type test and multi-point load test with report for motor from specific delivery batch.	P	M	M	M	M	M	M	M	M	M	M	M	M
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	M	M	M	M	M	M
760	Vibration level test	P	P	P	P	P	P	P	M	M	M	M	M	M
762	Noise level test.	P	P	P	P	P	P	P	M	M	M	M	M	M

### Variable speed drives

470	Prepared for hollow shaft pulse tacho (L&L equivalent).	R	R	R	R	R	R	R	M	M	M	M	M	M
472	1024 pulse tacho (L&L 861).	R	R	R	R	R	R	R	M	M	M	M	M	M
473	2048 pulse tacho (L&L 861).	R	R	R	R	R	R	R	M	M	M	M	M	M
474	Separate motor cooling (fan axial, N-end) and prepared for hollow shaft tacho (L&L equivalent).	R	R	R	R	R	R	R	M	M	M	M	M	M
476	Separate motor cooling (fan axial, N-end) and 1024 pulse tacho (L&L 861).	R	R	R	R	R	R	R	M	M	M	M	M	M
477	Separate motor cooling (fan axial, N-end) and 2048 pulse tacho (L&L 861).	R	R	R	R	R	R	R	M	M	M	M	M	M
572	1024 pulse tacho (L&L 503).	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
573	2048 pulse tacho (L&L 503).	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
574	Separate motor cooling (fan axial, N-end) and prepared for hollow shaft tacho (L&L 503).	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
576	Separate motor cooling (fan axial, N-end) and 1024 pulse tacho (L&L 503).	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
577	Separate motor cooling (fan axial, N-end) and 2048 pulse tacho (L&L 503).	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
580	Separate motor cooling, IP44, 400V, 50Hz (fan axial, N-end) and 1024 pulse tacho (L&L 503).	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
581	Separate motor cooling, IP44, 400V, 50Hz (fan axial, N-end) and 2048 pulse tacho (L&L 503).	NA	NA	NA	NA	NA	NA	NA	M	M	M	M	M	M
661	1024 pulse tacho mounted, Hohner series 59, 11-30V	NA	NA	NA	P	P	P	P	NA	NA	NA	NA	NA	NA
662	2048 pulse tacho mounted, Hohner series 59, 11-30V	NA	NA	NA	P	P	P	P	NA	NA	NA	NA	NA	NA
701	Insulated bearing at N-end.	NA	NA	NA	NA	NA	NA	NA	NA	NA	M	M	M	M
704	EMC cable gland.	NA	NA	NA	P	P	P	P	M	M	M	M	M	M

### Y/D starting

117	Terminals for Y/D start at both speeds (two speed windings).	P	P	P	P	P	P	P	P	P	P	P	P	P
118	Terminals for Y/D start at high speed (two speed windings).	P	P	P	P	P	P	P	NA	NA	NA	NA	NA	NA

<sup>1)</sup> Certain variant codes cannot be used simultaneously.

S = Included as standard.  
M = On modification of a stocked motor, or on new manufacture, the number per order may be limited.

P = New manufacture only.  
R = On request.  
NA = Not applicable.