



SELECTION PROCEDURE

The output powers published overleaf are based upon continuous maximum rating conditions. Therefore design factors for above average running periods do not normally affect the selection. These ratings assume a normal operating condition at an ambient temperature not exceeding 40°C at an altitude below 1000 metres. Correction factors for other conditions are given below.

Permitted Frequency of Starts

When a motor is stopped and restarted too frequently, overheating will occur. Specific results depend upon the relative inertia of the motor and of the driven machine so it is not possible to publish meaningful figures. If in doubt contact your local Fenner authorised distributor.

Noise and Vibration

The FM:P range of motors comply with international recommendations relating to maximum permitted noise levels. All rotors are dynamically balanced, with a key fitted, in order to ensure that vibration levels do not exceed class N, ISO 2373.

Mounting Ratings for Ambient Temperature & Altitude

Ambient Temp °C	Power available as % of published figure at following altitudes (metres)						
	1000	1500	2000	2500	3000	3500	4000
25	100	100	100	100	100	100	100
40	100	97.0	94.5	92.0	89.0	86.5	83.5
45	96.5	93.5	91.0	89.0	86.0	83.5	80.5
50	93.0	90.0	88.0	85.5	83.0	80.5	77.5
55	90.0	87.5	85.0	83.0	80.0	78.0	75.0
60	86.5	84.0	82.0	79.5	77.0	75.0	72.0

Motor bearings are charged with grease suited for ambient temperatures in the range -30°C to 55°C.

Starting torque and nominal torque

M_s : The starting torque is the mechanical torque developed by the motor with the rotor locked.

M_N : The nominal torque is the mechanical torque that the motor is developing when it is giving its nominal power and speed.

Starting current and nominal current

I_N : The nominal current is the current that the motor is developing at nominal power and nominal voltage.

I_s : The starting current is the current that the motor is developing when the rotor is locked.

Bearing Life

Bearing life depends on factors such as bearing load, rotation, speed, and operating temperature of the bearing. Standard electric motors are fitted with bearings of sufficient capacity for normal overhung or axial loads. If bearing capacity is in doubt consult your supplier with full application details.

Mounting Positions

Although motors are normally stocked in either the B3 or B5 assembly format, it is in most cases possible to mount them in any of the alternative mounting arrangements shown in the motor mounting arrangements table without further modification, but it is essential that the actual mounting is specified at the time of order.

Fenner High Efficiency Motors Specification

- **Class F Insulation**
Class F insulation with class B temperature rise.
- **IC 411 Cooling**
Surface cooled to IC 411 according to IEC 34-6.
- **IP55 Protection**
Protected to IEC 34-5 for IP code and achieves an IP55 classification.
- **Motor Frame**
Manufactured in high strength aluminium up to 132 frame and high grade cast iron 160 frame and above.
- **Stator**
Constructed from high grade electrical steel laminations.
- **Rotor**
Dynamically balanced squirrel cage rotor is made from cast aluminium shrunk onto the shaft.
- **Bearings and Seals**
Deep groove ball bearings with shields are normally used. Larger frames use NU roller bearings on drive end.
- **Warranty and Support**
The comprehensive 12 month warranty is complemented by the full technical support from your local authorised distributor.

Mounting Positions

Normal Mounting Arrangement	Alternative Mounting Arrangement		
IM 1001 Foot Mounted (B3)	IM 1011 (V5)	IM 1031 (V6)	IM 1051 (B6)
	IM 1061 (B7)	IM 1071 (B8)	

Normal Mounting Arrangement	Alternative Mounting Arrangement	
IM 3001 Flange Mounted (B5)	IM 3011 (V1)	IM 3031 (V3)
IM 3601 Face Mounted (B14)	IM 3611 (V18)	IM 3631 (V19)

Motor Mounting Arrangements

To IEC 34-7 code 1 and code 11 shown

Ordering Instructions

All Fenner electric motors are identified by a product code number. This consists of an eight digit code depending on the motor material, frame size, mounting, speed and power.

These codes should be included on all enquiries, correspondence and orders.

FIRST THREE DIGITS:

Motor material and efficiency

Code	Range	Material
170	Standard Efficiency	Aluminium
171	Standard Efficiency	Cast Iron
172	Premium Efficiency	Aluminium
173	Premium Efficiency	Cast Iron

FOURTH DIGIT:

Frame size

Code	Frame
A	56
B	63
C	71
D	80
E	90
F	100
G	112
H	132
J	160
K	180
L	200
M	225
N	250
P	280
R	315
S	355
T	400
U	450
V	500
W	560

FIFTH DIGIT:

Mounting type

Code	Mounting	Description
1	B3	Foot mounted
2	B5	Flange mounted
3	B35	Foot & Flange mounted
4	B14	Face mounted
5	B34	Foot & Face mounted
6	B14B	DIN standard Face mounted
7	B34B	Foot & DIN standard Face mounted

SIXTH DIGIT:

Nominal output speed

Code	Poles	Nominal Speed
2	2	3000
4	4	1500
6	6	1000
8	8	750
1	10	600
3	12	500

SEVENTH & EIGHTH DIGITS:

Rated output power

Code	kW	Code	kW
<i>01</i>	<i>0.06</i>	32	75
02	0.09	33	90
03	0.12	34	110
04	0.18	35	132
05	0.25	36	150
06	0.37	37	160
07	0.55	38	180
08	0.75	39	185
09	1.1	40	200
<i>10</i>	<i>1.3</i>	41	225
11	1.4	42	250
12	1.5	43	280
<i>13</i>	<i>1.8</i>	44	315
<i>14</i>	<i>2.0</i>	45	355
15	2.2	46	400
16	3.0	47	450
<i>17</i>	<i>3.7</i>	48	500
<i>18</i>	<i>3.8</i>	49	560
19	4.0	50	630
20	5.5	51	710
<i>21</i>	<i>7.2</i>	52	750
22	7.5	53	800
<i>23</i>	<i>9.0</i>	54	815
24	11.0	55	850
25	15.0	56	900
26	18.5	57	1000
27	22.0	58	1120
28	30.0	59	1200
29	37.0	60	1250
30	45.0	61	1400
31	55.0	–	–

Italics indicate non-standard

**FM:P Series - 2 Pole - 3000 rpm**

230/400V - 50Hz

400/690V - 50Hz

Fitted with thermistors as standard, NU bearings on all cast iron motors

Frame Size EN600034 (IEC-DIN)

Frame Size	Product Code	Frame Material	Rated Output Power P _N kW	Rated Current			Full Load Speed n _{full load} rpm	Full Load Power Factor cos φ	Efficiency		Full Load Torque M _N Nm	Starting Current Is/In A	Starting Torque Ms/Mn	Pull Out Torque Mk/Mn	Sound Pressure Level dB9(A)	Moment of Inertia J=¼GD ² kgm ²	Weight Foot Mounted kg
				380V I _N A	400V I _N A	420V I _N A			100% η%	75% η%							
# 56K	170A*202	Aluminium	0.09	0.32	0.30	0.29	2695	0.69	67.5	64.0	0.32	3.9	3.0	3.0	50	0.00005	3.2
# 56G	170A*203	Aluminium	0.12	0.40	0.38	0.36	2700	0.70	68.8	67.2	0.43	3.9	2.7	3.2	50	0.00006	3.4
# 63K	170B*204	Aluminium	0.18	0.59	0.56	0.53	2530	0.71	68.1	69.7	0.68	3.1	2.0	2.7	50	0.00016	3.9
# 63G	170B*205	Aluminium	0.25	0.78	0.74	0.70	2585	0.72	71.4	72.4	0.93	4.1	3.0	3.2	50	0.00018	4.4
# 71K	170C*206	Aluminium	0.37	1.02	0.97	0.92	2805	0.82	71.2	70.2	1.26	5.7	3.5	3.2	54	0.00033	6.2
# 71G	170C*207	Aluminium	0.55	1.39	1.32	1.26	2820	0.81	78.5	77.6	1.87	6.3	3.4	3.5	54	0.00046	6.3
# 80K	170D*208	Aluminium	0.75	1.88	1.79	1.70	2875	0.79	78.8	77.0	2.50	6.9	3.3	3.5	57	0.00085	8.3
• 80G	172D*209	Aluminium	1.1	2.36	2.24	2.13	2875	0.86	83.8	84.7	3.66	7.4	2.9	3.3	55	0.00130	9.9
• 90S	172E*212	Aluminium	1.5	3.25	3.09	2.94	2875	0.83	84.4	84.7	4.99	6.6	2.9	3.1	60	0.00185	13.7
• 90L	172E*215	Aluminium	2.2	4.45	4.23	4.03	2860	0.88	85.6	86.7	7.35	6.4	3.0	3.2	60	0.00215	15.4
• 100L	172F*216	Aluminium	3.0	5.83	5.54	5.28	2870	0.90	86.8	88.2	9.99	7.8	2.7	3.5	64	0.00425	22.5
• 112M	172G*219	Aluminium	4.0	7.69	7.31	6.96	2875	0.90	87.6	88.8	13.3	7.1	1.9	3.3	65	0.00650	28.5
• 132S	172H*220	Aluminium	5.5	10.5	10.0	9.52	2925	0.89	90.3	90.8	18.0	7.8	2.3	3.5	68	0.01456	44.0
• 132Sx	172H*222	Aluminium	7.5	14.0	13.3	12.7	2925	0.91	90.8	91.2	24.5	7.0	1.8	3.2	68	0.01565	49.0
• 160M	173J*224	Cast Iron	11.0	20.6	19.6	18.7	2935	0.90	92.0	92.1	35.8	8.1	2.1	3.2	74	0.05490	113
• 160Mx	173J*225	Cast Iron	15.0	27.2	25.8	24.6	2935	0.92	92.5	92.7	48.9	8.6	2.5	3.6	74	0.06350	123
• 160L	173J*226	Cast Iron	18.5	33.9	32.2	30.7	2940	0.90	92.6	92.7	60.1	8.5	2.6	3.5	74	0.07250	141
• 180M	173K*227	Cast Iron	22.0	39.4	37.4	35.6	2950	0.92	93.1	92.8	71.3	7.9	2.6	3.3	77	0.10250	180
• 200L	173L*228	Cast Iron	30.0	53.9	51.2	48.8	2950	0.91	93.7	93.7	97.2	8.1	2.4	3.2	79	0.17300	232
• 200Lx	173L*229	Cast Iron	37.0	66.2	62.9	59.9	2950	0.91	93.9	93.7	120	7.8	2.1	3.0	79	0.19500	246
• 225M	173M*230	Cast Iron	45.0	80.5	76.5	72.9	2965	0.91	94.4	94.2	145	8.0	2.5	3.4	79	0.32500	315
• 250M	173N*231	Cast Iron	55.0	98.7	93.8	89.3	2970	0.90	95.0	94.9	177	8.0	2.1	3.3	80	0.39500	390
• 280S	173P*232	Cast Iron	75.0	132	125	119	2975	0.91	95.0	94.9	241	7.4	2.2	3.2	81	0.68300	540
• 280M	173P*233	Cast Iron	90.0	157	149	142	2980	0.92	95.6	95.3	289	7.2	2.2	3.4	82	0.76500	570
• 315S	173R*234	Cast Iron	110	196	186	177	2975	0.90	95.0	94.9	354	6.5	1.8	2.9	84	1.55800	960
• 315M	173R*235	Cast Iron	132	231	219	209	2975	0.91	95.4	95.3	424	6.1	1.8	2.7	84	1.72600	1010
• 315L	173R*237	Cast Iron	160	278	264	251	2980	0.92	95.4	95.3	513	7.1	2.0	3.2	85	1.94100	1120
• 315Lx	173R*240	Cast Iron	200	345	328	312	2980	0.92	96.0	95.9	641	6.9	1.9	3.1	85	2.21200	1200
• 355M	173S*242	Cast Iron	250	440	418	398	2985	0.90	95.9	95.8	800	7.0	1.9	2.9	88	3.84900	1760
• 355L	173S*243	Cast Iron	280	491	466	444	2985	0.90	96.3	96.2	896	5.6	1.4	2.4	88	3.94900	1940
• 355Lx	173S*244	Cast Iron	315	546	519	494	2985	0.91	96.4	96.3	1008	7.6	1.7	3.3	88	3.99500	2000
• 400M	173S*245	Cast Iron	355	624	593	565	2990	0.90	96.1	96.0	1134	7.7	1.4	2.2	88	7.80000	2950
• 400Mx	173T*246	Cast Iron	400	702	667	635	2990	0.90	96.2	96.1	1278	7.8	1.5	2.7	92	8.30000	3200
• 400My	173T*247	Cast Iron	450	789	750	714	2990	0.90	96.3	96.2	1438	7.7	1.3	2.5	92	8.95000	3340
• 400L	173T*248	Cast Iron	500	866	823	784	2990	0.91	96.4	96.3	1597	7.5	1.3	2.6	92	9.95000	3450

* Replace * in Part number with desired mounting configuration (1=B3 / 2=B5 / 3=B35 / 4=B14 / 5=B34)

• Indicates that this motor is ECA compliant # Indicates no thermistors fitted

Motors in the range of 1.1 - 90kW exceed CEMEP EFF1 minimum efficiency levels

All technical details are based on 400V/50Hz

Motors from 110 to 400kW exceed the minimum efficiency levels stipulated by WIMES specifications

FM:P Series - 4 Pole - 1500 rpm

230/400V - 50Hz

400/690V - 50Hz

Fitted with thermistors as standard, NU bearings on all cast iron motors

Frame Size EN600034 (IEC-DIN)

Frame Size	Product Code	Frame Material	Rated Output Power P _N kW	Rated Current			Full Load Speed n _{full load} rpm	Full Load Power Factor cos φ	Efficiency		Full Load Torque M _N Nm	Starting Current Is/In A	Starting Torque Ms/Mn	Pull Out Torque Mk/Mn	Sound Pressure Level dB9(A)	Moment of Inertia J=¼GD ² kgm ²	Weight Foot Mounted kg
				380V I _N A	400V I _N A	420V I _N A			100% η%	75% η%							
# 56G	170A*402	Aluminium	0.09	0.40	0.38	0.36	1340	0.63	59.1	55.8	0.65	3.0	2.6	3.2	45	0.00010	3.4
# 63K	170B*403	Aluminium	0.12	0.55	0.52	0.50	1355	0.64	57.1	53.1	0.85	2.9	2.2	3.0	45	0.00032	3.5
# 63G	170B*404	Aluminium	0.18	0.76	0.72	0.69	1215	0.69	57.3	53.6	1.42	2.7	3.0	2.6	45	0.00039	4.0
# 71 K	170C*405	Aluminium	0.25	0.79	0.75	0.71	1400	0.73	69.4	67.3	1.71	4.6	2.8	3.1	46	0.00063	6.1
# 71G	170C*406	Aluminium	0.37	1.07	1.02	0.97	1395	0.73	71.1	70.5	2.54	5.0	3.2	3.4	46	0.00071	6.7
# 80K	170D*407	Aluminium	0.55	1.53	1.45	1.38	1400	0.74	76.5	75.2	3.76	4.8	2.6	2.9	47	0.00131	8.9
# 80G	170D*408	Aluminium	0.75	2.12	2.01	1.91	1370	0.73	75.2	72.6	5.23	5.2	2.5	2.7	47	0.00148	9.6
• 90S	172E*409	Aluminium	1.1	2.51	2.38	2.27	1420	0.80	83.8	84.3	7.40	5.5	2.5	2.5	49	0.00232	13.8
• 90L	172E*412	Aluminium	1.5	3.36	3.19	3.04	1420	0.80	85.1	85.7	10.1	6.4	1.9	3.0	49	0.00312	16.5
• 100L	172F*415	Aluminium	2.2	4.77	4.53	4.31	1440	0.81	86.5	86.9	14.6	6.4	2.1	2.9	48	0.00779	21.5
• 100Lx	172F*416	Aluminium	3.0	6.47	6.15	5.86	1460	0.81	87.7	87.7	19.6	7.2	2.7	3.1	49	0.00865	25.3
• 112M	172G*419	Aluminium	4.0	8.11	7.7	7.33	1445	0.85	88.7	89.3	26.4	7.0	2.2	3.1	49	0.01185	32.0
• 132S	172H*420	Aluminium	5.5	11.2	10.6	10.1	1455	0.84	89.2	89.9	36.1	7.6	2.0	3.3	52	0.03301	47.0
• 132M	172H*422	Aluminium	7.5	14.6	13.9	13.2	1460	0.87	90.1	90.8	49.1	8.4	2.2	3.1	54	0.04121	58.0
• 160M	172J*424	Cast Iron	11.0	21.4	20.3	19.3	1460	0.86	91.9	92.3	72.0	7.4	1.9	2.8	54	0.10520	125
• 160L	172J*425	Cast Iron	15.0	28.6	27.2	25.9	1460	0.87	92.6	92.7	98.2	7.6	2.0	2.9	59	0.11230	146
• 180M	173K*426	Cast Iron	18.5	35.1	33.3	31.7	1470	0.87	93.2	93.3	121	7.2	2.0	2.9	59	0.16590	179
• 180L	173K*427	Cast Iron	22.0	41.6	39.5	37.6	1470	0.87	93.4	93.7	143	7.1	1.9	2.9	61	0.18650	195
• 200L	173L*428	Cast Iron	30.0	55.5	52.7	50.2	1470	0.88	93.9	94.1	195	7.2	2.2	3.0	62	0.30200	248
• 225S	173M*429	Cast Iron	37.0	69.2	65.7	62.6	1480	0.87	94.3	94.4	239	6.9	2.0	2.9	63	0.53800	304
• 225M	173M*430	Cast Iron	45.0	83.5	79.3	75.5	1480	0.87	94.6	94.8	291	7.3	2.2	3.0	67	0.63500	337
• 250M	173N*431	Cast Iron	55.0	101	95.6	91.0	1480	0.88	94.9	95	355	7.5	2.3	3.1	67	0.78500	395
• 280S	173P*432	Cast Iron	75.0	135	128	122	1485	0.89	95.4	95.4	483	6.6	1.9	3.0	69	1.55200	600
• 280M	173P*433	Cast Iron	90.0	161	153	146	1485	0.89	95.6	95.7	579	7.3	2.3	3.1	72	1.86500	660
• 315S	173R*434	Cast Iron	110	202	192	183	1485	0.87	95.1	95	708	6.0	1.8	2.7	72	3.48000	960
• 315M	173R*435	Cast Iron	132	241	229	218	1485	0.89	95.5	95.4	849	5.9	1.8	2.6	75	3.67800	1040
• 315L	173R*437	Cast Iron	160	279	265	252	1485	0.91	95.7	95.6	1029	5.8	1.8	2.7	75	4.47200	1140
• 315Lx	173R*440	Cast Iron	200	358	340	324	1485	0.89	95.8	95.7	1287	6.2	2.0	2.8	77	4.85600	1250
• 355M	173S*442	Cast Iron	250	440	418	398	1490	0.90	96.0	95.9	1603	6.4	2.7	3.0	77	7.36400	1795
• 355L	173S*443	Cast Iron	280	497	472	450	1490	0.89	96.3	96.2	1795	6.9	2.5	3.1	77	8.01400	1920
• 355Lx	173S*444	Cast Iron	315	552	524	499	1490	0.90	96.4	96.3	2019	7.7	2.2	3.1	81	9.10000	2050
• 400M	173S*445	Cast Iron	355	709	674	642	1490	0.89	96.3	96.2	2564	6.6	1.2	2.7	81	15.2500	3150
• 400Mx	173T*446	Cast Iron	400	787	748	712	1490	0.90	96.5	96.4	2885	6.8	1.3	3.0	84	15.4500	3300
• 400L	173T*447	Cast Iron	450	883	839	799	1490	0.89	96.7	96.6	3205	6.4	1.1	2.7	84	18.7500	3460
• 400Lx	173T*448	Cast Iron	500	988	939	894	1490	0.89	96.8	96.7	3590	7.6	1.6	3.5	86	19.8500	3580

* Replace * in Part number with desired mounting configuration (1=B3 / 2=B5 / 3=B35 / 4=B14 / 5=B34)

• Indicates that this motor is ECA compliant # Indicates no thermistors fitted

Motors in the range of 1.1 - 90kW exceed CEMEP EFF1 minimum efficiency levels

All technical details are based on 400V/50Hz

Motors from 110 to 400kW exceed the minimum efficiency levels stipulated by WIMES specifications

**FM:P Series - 6 Pole - 1000 rpm**

230/400V - 50Hz

400/690V - 50Hz

Fitted with thermistors as standard, NU bearings on all cast iron motors

Frame Size EN600034 (IEC-DIN)

Frame Size	Product Code	Frame Material	Rated Output Power P _N kW	Rated Current			Full Load Speed n _{full load} rpm	Full Load Power Factor cos φ	Efficiency		Full Load Torque M _N Nm	Starting Current Is/In A	Starting Torque Ms/Mn	Pull Out Torque Mk/Mn	Sound Pressure Level dB(A)	Moment of Inertia J=1/4GD ² kgm ²	Weight Foot Mounted kg
				380V I _L A	400V I _N A	420V I _o A			100% η%	75% η%							
# 71K	170C*604	Aluminium	0.18	0.65	0.62	0.59	915	0.67	65.4	63.9	1.88	3.8	2.3	3.1	45	0.00091	6.4
# 71G	170C*605	Aluminium	0.25	0.94	0.89	0.85	915	0.66	64.3	60.8	2.61	3.6	2.6	4.3	45	0.00110	6.5
# 80K	170D*606	Aluminium	0.37	1.28	1.22	1.16	915	0.71	65.7	63.5	3.87	3.6	2.1	2.8	46	0.00152	8.5
# 80G	170D*607	Aluminium	0.55	1.84	1.75	1.67	895	0.72	66.5	66.3	5.87	3.4	2.1	2.6	46	0.00194	9.2
# 90S	170E*608	Aluminium	0.75	2.47	2.35	2.24	920	0.69	70.0	68.9	7.79	3.9	2.3	2.7	48	0.00297	12.0
# 90L	170E*609	Aluminium	1.1	3.32	3.15	3.00	915	0.71	73.8	73.7	11.5	4.1	2.4	2.8	48	0.00392	14.0
# 100L	170F*612	Aluminium	1.5	4.15	3.94	3.75	925	0.72	78.4	79.0	15.5	4.8	2.3	2.7	52	0.00745	19.5
# 112M	170G*615	Aluminium	2.2	5.51	5.23	4.98	940	0.77	80.9	81.5	22.4	5.1	1.9	2.6	54	0.01324	28.0
# 132S	170H*616	Aluminium	3.0	7.51	7.13	6.79	960	0.76	81.8	81.2	29.9	6.2	1.9	3.4	57	0.02821	38.0
# 132M	170H*619	Aluminium	4.0	9.41	8.94	8.51	965	0.78	84.5	84.2	39.6	6.9	1.8	3.7	57	0.03716	45.0
# 132Mx	170H*620	Aluminium	5.5	12.9	12.2	11.6	965	0.78	85.0	84.5	54.4	7.4	1.9	3.8	57	0.04889	54.0
• 160M	173J*622	Cast Iron	7.5	16.3	15.5	14.8	970	0.79	89.0	88.7	73.9	6.6	1.7	3.0	59	0.12120	114
• 160L	173J*624	Cast Iron	11.0	22.6	21.5	20.5	970	0.83	89.0	88.7	109	6.6	1.7	2.7	59	0.14520	135
• 180L	173K*625	Cast Iron	15.0	30.4	28.9	27.5	975	0.83	90.0	89.7	147	6.9	2.4	2.7	59	0.22850	185
• 200L	173L*626	Cast Iron	18.5	37.3	35.4	33.7	980	0.84	90.0	89.7	181	6.8	2.1	2.8	63	0.34200	252
• 200Lx	173L*627	Cast Iron	22.0	43.2	41.0	39.0	980	0.85	91.5	91.2	215	6.8	1.9	2.7	63	0.38600	310
• 225M	173M*628	Cast Iron	30.0	58.9	56.0	53.3	980	0.84	92.0	91.7	293	6.7	1.8	2.5	63	0.62500	303
• 250M	173N*629	Cast Iron	37.0	68.7	65.3	62.2	980	0.88	93.0	92.7	361	6.9	2.0	2.8	64	0.98500	405
• 280S	173P*630	Cast Iron	45.0	83.4	79.2	75.4	985	0.88	93.4	93.1	437	6.6	1.8	2.6	66	1.73200	465
• 280M	173P*631	Cast Iron	55.0	100	95.2	90.7	985	0.89	93.8	93.5	534	6.7	1.9	2.6	66	1.96500	540
• 315S	173R*632	Cast Iron	75.0	141	134	128	985	0.86	94.3	94.0	728	6.2	1.6	2.5	68	3.72300	900
• 315M	173R*633	Cast Iron	90.0	172	163	155	985	0.85	94.5	94.2	873	6.3	1.8	2.5	68	4.52600	980
• 315L	173R*634	Cast Iron	110	203	193	184	985	0.87	94.8	94.5	1067	6.1	1.7	2.4	69	5.15700	1160
• 315Lx	173R*635	Cast Iron	132	242	230	219	985	0.87	95.0	94.7	1280	6.2	1.8	2.4	69	5.68500	1210
• 355M	173S*637	Cast Iron	160	283	269	256	990	0.90	95.5	95.2	1544	7.3	2.0	3.1	70	9.57000	1770
• 355Mx	173S*638	Cast Iron	180	315	299	285	990	0.91	95.6	95.3	1737	7.2	1.5	2.9	71	9.89000	1870
• 355My	173S*640	Cast Iron	200	354	336	320	990	0.90	95.5	95.2	1930	7.2	1.8	3.0	71	11.1000	1900
355L	173S*641	Cast Iron	225	397	377	359	990	0.90	95.7	95.4	2171	7.0	1.5	2.9	71	11.3000	1980
• 355Lx	173S*642	Cast Iron	250	441	419	399	990	0.90	95.9	95.6	2412	7.3	1.7	3.0	71	11.8000	2150
• 355Ly	173S*643	Cast Iron	280	504	479	456	990	0.88	96.0	95.7	2702	6.8	2.0	2.8	71	12.9000	2200
• 400M	173T*644	Cast Iron	315	566	538	512	990	0.88	96.1	95.8	3039	6.8	1.2	2.8	74	21.5500	3560
400Mx	173T*645	Cast Iron	355	637	605	576	995	0.88	96.2	95.9	3408	6.9	1.0	2.9	74	23.8500	3700
400L	173T*646	Cast Iron	400	718	682	650	995	0.88	96.3	96.0	3840	7.5	1.3	3.1	74	26.7500	3830
400Lx	173T*647	Cast Iron	450	806	766	730	995	0.88	96.4	96.1	4320	6.5	0.9	2.9	74	29.1500	3900
400Ly	173T*648	Cast Iron	500	895	850	810	995	0.88	96.5	96.2	4799	7.6	1.5	3.4	74	31.7500	3995

* Replace * in Part number with desired mounting configuration (1=B3 / 2=B5 / 3=B35 / 4=B14 / 5=B34)

• Indicates that this motor is ECA compliant # Indicates no thermistors fitted

Motors from 5.5 to 315kW exceed efficiency levels stipulated by WIMES specifications

All technical details are based on 400V/50Hz

FM:P Series - 8 Pole - 750 rpm

230/400V - 50Hz

400/690V - 50Hz

Fitted with thermistors as standard, NU bearings on all cast iron motors

Frame Size EN600034 (IEC-DIN)

Frame Size	Product Code	Frame Material	Rated Output Power P _N kW	Rated Current			Full Load Speed n _{full load} rpm	Full Load Power Factor cos φ	Efficiency		Full Load Torque M _N Nm	Starting Current Is/In A	Starting Torque Ms/Mn	Pull Out Torque Mk/Mn	Sound Pressure Level dB9(A)	Moment of Inertia J=¼GD ² kgm ²	Weight Foot Mounted kg
				380V I _L A	400V I _N A	420V I ₀ A			100% η%	75% η%							
# 80K	170D*804	Aluminium	0.18	0.91	0.86	0.82	700	0.58	56.9	52.8	2.46	3.0	2.6	3.2	42	0.00173	8.3
# 80G	170D*805	Aluminium	0.25	1.17	1.11	1.06	695	0.59	59.6	55.8	3.44	3.1	2.5	3.1	42	0.00204	9.0
# 90S	170E*806	Aluminium	0.37	1.60	1.52	1.45	695	0.58	64.5	61.1	5.09	3.4	2.6	3.1	44	0.00343	12.0
# 90L	170E*807	Aluminium	0.55	2.27	2.16	2.06	690	0.59	66.1	63.7	7.62	3.4	2.3	3.1	44	0.00425	15.0
# 100L	170F*808	Aluminium	0.75	2.53	2.40	2.29	700	0.67	70.4	67.3	10.2	3.9	2.3	2.9	45	0.00598	19.0
# 100Lx	170F*809	Aluminium	1.1	3.24	3.08	2.93	705	0.71	75.3	73.5	14.9	4.0	2.1	2.6	45	0.00745	22.0
# 112M	170G*812	Aluminium	1.5	4.57	4.34	4.13	700	0.68	76.0	75.1	20.5	4.2	2.2	2.7	48	0.01326	29.0
# 132S	170H*815	Aluminium	2.2	5.80	5.51	5.25	705	0.74	80.2	80.5	29.8	5.0	2.1	2.7	50	0.02903	39.0
# 132M	170H*816	Aluminium	3.0	7.38	7.01	6.68	710	0.77	82.3	83.3	40.4	5.2	1.9	2.8	51	0.03828	45.0
160M	173J*819	Cast Iron	4.0	9.37	8.90	8.48	725	0.76	85.0	84.4	52.7	5.2	1.8	2.6	54	0.08890	106
• 160Mx	173J*820	Cast Iron	5.5	13.1	12.4	11.8	730	0.75	86.0	85.4	72.0	6.4	2.3	3.2	54	0.09580	128
• 160L	173J*822	Cast Iron	7.5	16.5	15.7	15.0	730	0.78	89.0	88.3	98.2	6.1	2.0	2.8	55	0.10210	141
• 180L	173K*824	Cast Iron	11.0	24.4	23.2	22.1	725	0.77	89.0	88.3	145	6.6	2.2	2.6	57	0.22750	185
• 200L	173L*825	Cast Iron	15.0	33.4	31.7	30.2	735	0.76	90.0	89.3	195	6.5	2.0	2.6	58	0.39500	250
• 225S	173M*826	Cast Iron	18.5	41.1	39.0	37.1	730	0.76	90.0	89.3	243	6.9	2.1	2.7	60	0.60300	396
• 225M	173M*827	Cast Iron	22.0	45.8	43.5	41.4	730	0.80	91.5	90.8	288	7.1	2.0	2.7	60	0.69800	346
• 250M	173N*828	Cast Iron	30.0	61.6	58.5	55.7	735	0.81	92.0	91.3	390	6.1	1.9	2.7	62	0.98300	420
• 280S	173P*829	Cast Iron	37.0	74.2	70.5	67.1	735	0.81	93.0	92.3	481	5.8	1.9	2.4	63	1.85700	475
• 280M	173P*830	Cast Iron	45.0	91.7	87.1	83.0	735	0.80	93.4	92.7	585	6.0	2.0	2.5	63	1.99800	555
• 315S	173R*831	Cast Iron	55.0	111	105	100	740	0.81	93.8	93.1	710	5.3	1.5	2.4	64	4.95900	945
• 315M	173R*832	Cast Iron	75.0	147	140	133	740	0.82	94.3	93.6	968	6.3	1.8	2.5	64	5.82500	1025
• 315L	173R*833	Cast Iron	90.0	177	168	160	740	0.82	94.5	93.8	1162	6.4	1.9	2.6	65	6.75300	1100
• 315Lx	173R*834	Cast Iron	110	215	204	194	740	0.82	94.8	94.1	1420	6.1	1.8	2.5	65	7.35200	1200
• 355M	173S*835	Cast Iron	132	251	238	227	745	0.84	95.0	94.3	1693	6.8	1.7	2.9	70	12.9400	1890
355Mx	173S*837	Cast Iron	160	297	282	269	745	0.86	95.5	94.8	2052	5.8	1.4	2.6	70	13.3200	1970
• 355L	173S*838	Cast Iron	180	337	320	305	745	0.85	95.6	94.9	2308	6.2	1.5	2.8	71	14.0000	2040
• 355Lx	173S*840	Cast Iron	200	393	373	355	745	0.81	95.6	94.9	2564	6.1	1.9	2.4	71	14.9000	2150
• 400M	173T*842	Cast Iron	250	483	459	437	745	0.82	95.9	95.2	3205	7.1	1.2	3.2	71	27.7500	3000
• 400Mx	173T*843	Cast Iron	280	535	508	484	745	0.83	96.0	95.3	3590	6.7	1.2	3.1	71	29.2500	3100
• 400L	173T*844	Cast Iron	315	608	578	550	745	0.82	96.0	95.3	4038	6.7	1.1	3.0	73	30.9500	3250
400Lx	173T*845	Cast Iron	355	676	642	611	745	0.83	96.2	95.5	4551	6.0	1.0	2.8	73	32.7500	3400
400Ly	173T*846	Cast Iron	400	761	723	689	745	0.83	96.3	95.6	5128	5.9	0.9	2.8	73	34.5500	3600

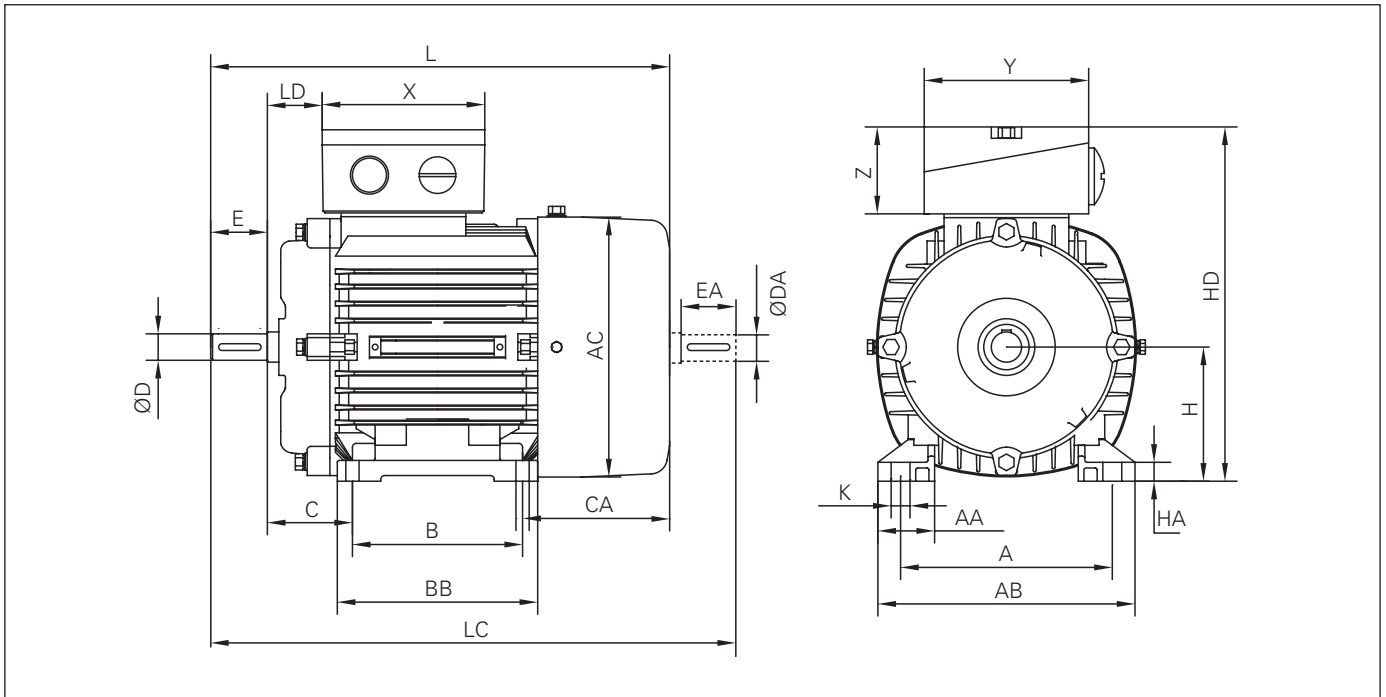
* Replace * in Part number with desired mounting configuration (1=B3 / 2=B5 / 3=B35 / 4=B14 / 5=B34)

• Indicates that this motor is ECA compliant # Indicates no thermistors fitted

Motors from 5.5 to 315kW exceed the efficiency levels stipulated by WIMES specifications

All technical details are based on 400V/50Hz

Aluminium Series Dimensions: B3 Mounting

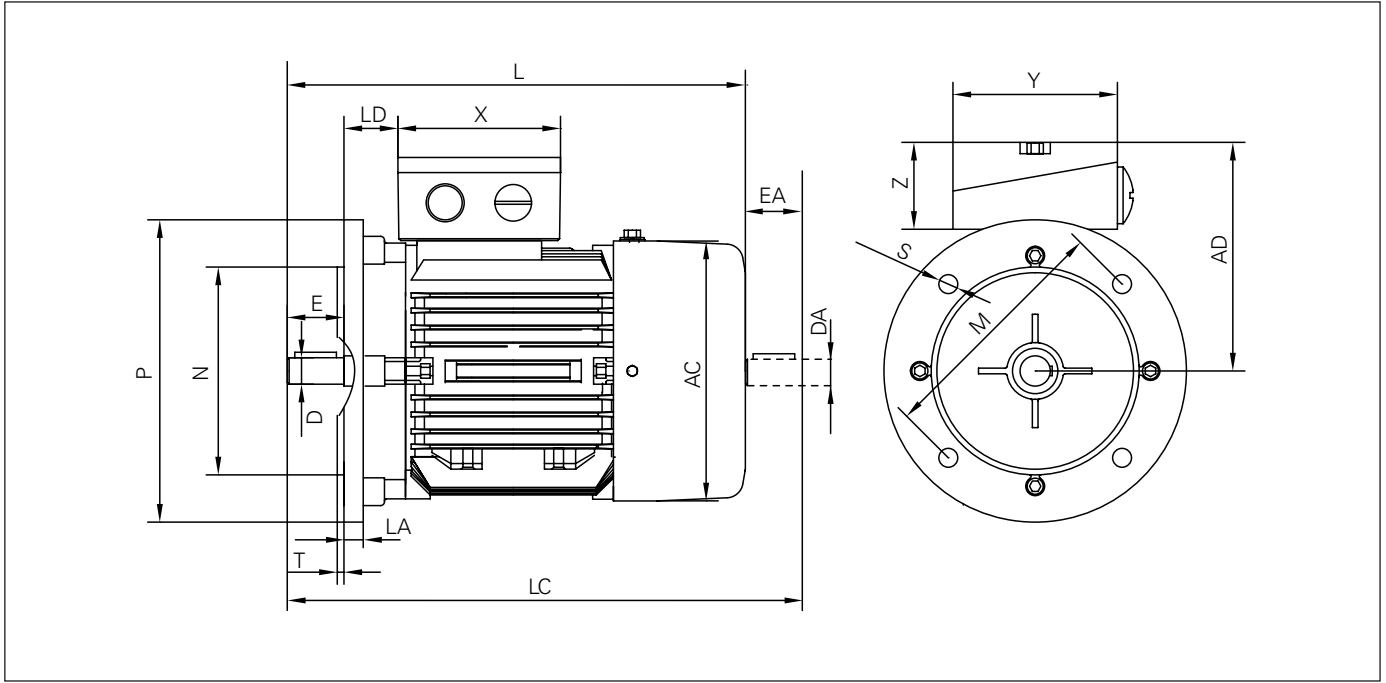


Fenner FM:P Aluminium Series IM B3 Mounting

EN600034 (IEC-DIN)

Type	Poles	A	AA	AB	AC	B	BB	C	CA	D	DA	E	EA	H	HA	HD	K	L	LC	LD	Eye Bolt	X	Y	Z
56K/G	2 - 4	90	25	110	120	71	90	36	70	9 j6	9 j6	20	20	56	8	158	6	192	217	62	None	87	87	48
63K/G	2 - 4	100	30	120	120	80	105	40	77	11 j6	11 j6	23	23	63	8	161	7	215	243	62	None	87	87	48
71K/G	2 - 6	112	30	136	148	90	106	45	77	14 j6	14 j6	30	30	71	10	197	7	240	275	72	None	87	87	48
80K/G	2 - 8	125	41	150	170	100	130	50	110	19 j6	19 j6	40	40	80	10	222	10	295	340	81.5	None	105	105	65
90S	2 - 8	140	46	168	190	100	165	56	86	24 j6	24 j6	50	50	90	12	250	10	315	370	81.5	None	105	105	65
90L	2 - 8	140	46	168	190	125	165	56	111	24 j6	24 j6	50	50	90	12	250	10	340	395	81.5	None	105	105	65
100L/Lx	2 - 8	160	45	190	197	140	176	63	127	28 j6	28 j6	60	60	100	12	265	12	385	450	96,5	M8	105	105	65
112M	2 - 8	190	53	220	230	140	180	70	130	28 j6	28 j6	60	60	112	12	300	12	395	460	91	M8	120	120	75
132S/Sx	2 - 8	216	60	252	260	140	224	89	132	38 k6	38 k6	80	80	132	15	340	12	472	557	108	M8	120	125	75
132M/Mx	2 - 8	216	60	252	260	178	224	89	170	38 k6	38 k6	80	80	132	15	340	12	510	595	108	M8	120	120	75

Dimensions in mm



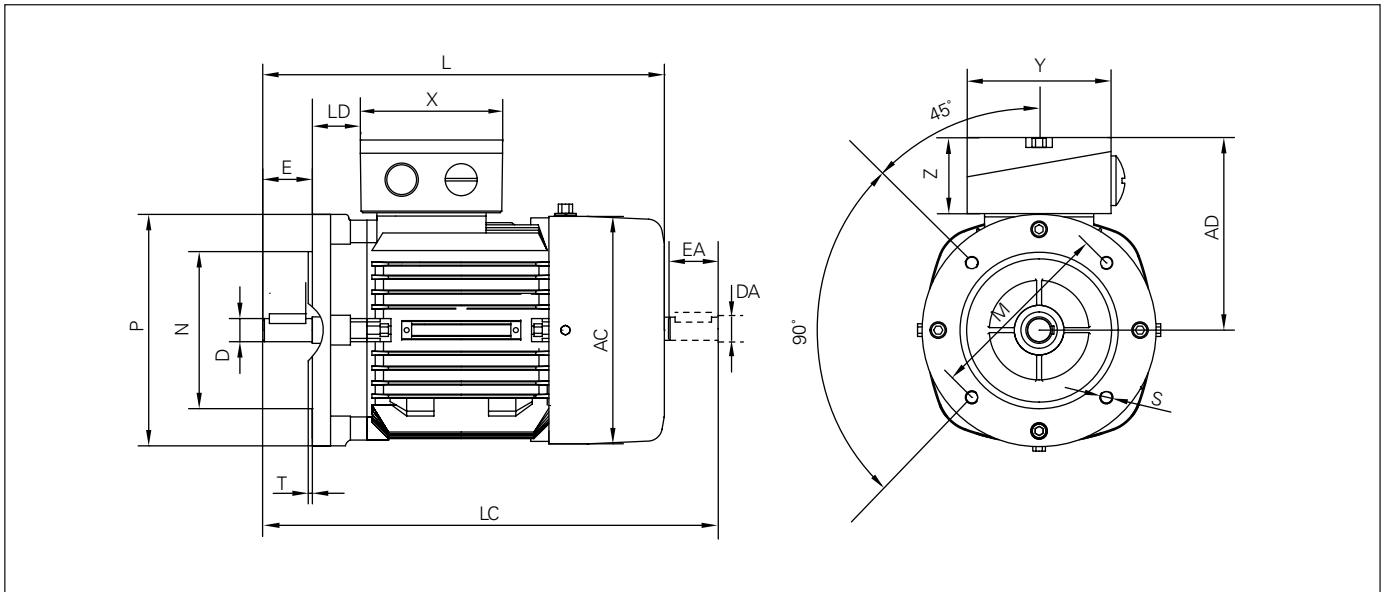
Fenner FM:P Aluminium Series IM B5 Mounting

EN600034 (IEC-DIN)

Type	Poles	A	AD	D	DA	E	EA	L	LA	LC	LD	M	N	P	S	T	X	Y	Z
56K/G	2 - 4	90	98	9 j6	9j6	20	20	192	9	217	62	100	80	120	4 x 7	3.0	87	87	48
63K/G	2 - 4	100	98	11 j6	11 j6	23	23	215	9	243	62	115	95	140	4 x 10	3.0	87	87	48
71K/G	2 - 6	112	126	14 j6	14 j6	30	30	240	10	275	72	130	110	160	4 x 10	3.5	87	87	48
80K/G	2 - 8	125	142	19 j6	19 j6	40	40	295	12	340	81.5	165	130	200	4 x 12	3.5	105	105	65
90S	2 - 8	140	160	24 j6	24 j6	50	50	315	12	370	81.5	165	130	200	4 x 12	3.5	105	105	65
90L	2 - 8	140	160	24 j6	24 j6	50	50	340	12	395	81.5	165	130	200	4 x 12	3.5	105	105	65
100L/Lx	2 - 8	160	165	28 j6	28 j6	60	60	385	13	450	96.5	215	180	250	4 x 15	4.0	105	105	65
112M	2 - 8	190	188	28 j6	28 j6	60	60	395	14	460	91	215	180	250	4 x 15	4.0	120	125	75
132S/Sx	2 - 8	216	208	38 k6	38 k6	80	80	472	14	557	108	265	230	300	4 x 15	4.0	120	125	75
132M/Mx	2 - 8	216	208	38 k6	38 k6	80	80	510	14	595	108	265	230	300	4 x 15	4.0	120	125	75

Dimensions in mm

Aluminium Series Dimensions: B14 Mounting



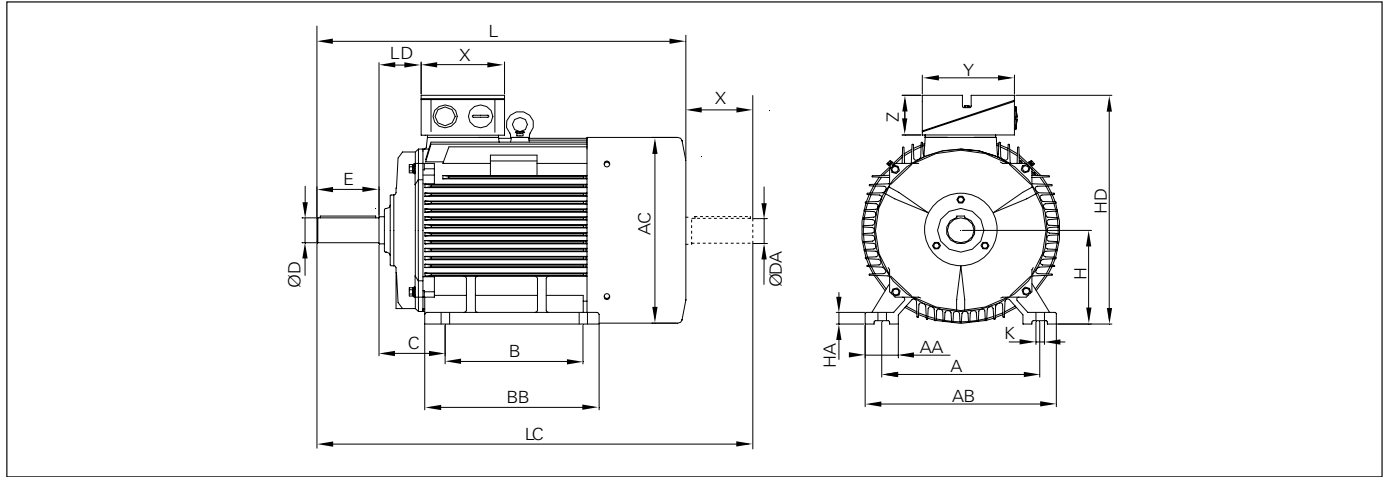
Fenner FM:P Aluminium Series IM B14 Mounting

EN600034 (IEC-DIN)

Frame	AC	AD	D	E	L	M	N	P	S	T	LD	X	Y	Z	Cable Entry
56K/G	120	98	9 j6	20	192	65	50	80	4 x M5	2.5	18.5	87	87	48	2 x M20x1.5
63K/G	120	98	11 j6	23	215	75	60	90	4 x M5	2.5	18.5	87	87	48	2 x M20x1.5
71K/G	148	126	14 j6	30	240	85	70	105	4 x M6	2.5	28.5	87	87	48	2 x M20x1.5
80K/G	170	142	19 j6	40	295	100	80	120	4 x M6	3.0	29	105	105	65	2 x M25x1.5
90S	190	160	24 j6	50	315	115	95	140	4 x M8	3.0	29	105	105	65	2 x M25x1.5
90L	190	160	24 j6	50	340	115	95	140	4 x M8	3.0	29	105	105	65	2 x M25x1.5
100L/Lx	197	165	28 j6	60	385	130	110	160	4 x M8	3.5	44	105	105	65	2 x M25x1.5
112M	230	188	28 j6	60	395	130	110	160	4 x M8	3.5	31	120	125	75	2 x M32x1.5
132S/Sx	260	208	38 k6	80	472	165	130	200	4 x M10	3.5	48	120	125	75	2 x M32x1.5
132M/Mx	260	208	38 k6	80	510	165	130	200	4 x M10	3.5	48	120	125	75	2 x M32x1.5

All Dimensions are in mm

Cast Iron Series Dimensions: B3 Mounting



Fenner FM:P Cast Iron Series 160 - 400 IM B3 Mounting

EN600034 (IEC-DIN)

Frame	A	AA	AB	AC	B	BB	C	CA	D	DA	E	EA	H	HA	HD	K	L	LC	LD	X	Y	Z	Cable Entry
160M	254	65	314	314	210	260	108	177	42 k6	42 k6	110	110	160	20	412	15	600	713	71.5	147	128	83	2 x M40 x 1.5
160L	254	65	314	314	254	300	108	193	42 k6	42 k6	110	110	160	20	412	15	660	753	71.5	147	128	83	2 x M40 x 1.5
180M	279	70	350	358	241	310	121	221	48 k6	48 k6	110	110	180	22	453	15	688	801	86.5	147	128	83	2 x M40 x 1.5
180L	279	70	350	358	279	350	121	223	48 k6	48 k6	110	110	180	22	453	15	728	841	86.5	147	128	83	2 x M40 x 1.5
200L (2P)	318	70	390	397	305	369	133	217	55 m6	48 k6	110	110	200	25	505	19	760	873	112	188	208	95	2 x M50 x 1.5
200L	318	70	390	397	305	369	133	217	55 m6	55 m6	110	110	200	25	505	19	760	873	112	188	208	95	2 x M50 x 1.5
225S	356	75	431	446	286	368	149	237	60 m6	55 m6	140	110	225	28	549	19	807	920	91	188	208	95	2 x M50 x 1.5
225M (2P)	356	75	431	446	311	393	149	237	55 m6	48 k6	110	110	225	28	549	19	802	915	112	188	208	95	2 x M50 x 1.5
225M	356	75	431	446	311	393	149	237	60 m6	55 m6	140	110	225	28	549	19	832	945	91	188	208	95	2 x M50 x 1.5
250M (2P)	406	80	484	485	349	445	168	258	60 m6	55 m6	140	110	250	30	617	24	910	1023	98	216	252	116	2 x M63 x 1.5
250M	406	80	484	485	349	445	168	258	65 m6	55 m6	140	110	250	30	617	24	910	1023	98	216	252	116	2 x M63 x 1.5
280S (2P)	457	85	542	547	368	490	190	281	65 m6	55 m6	140	110	280	35	674	24	974	1090	107	216	252	116	2 x M63 x 1.5
280S	457	85	542	547	368	490	190	289	75 m6	60 m6	140	140	280	35	674	24	982	1127	107	216	252	116	2 x M63 x 1.5
280M (2P)	457	85	542	547	419	540	190	291	65 m6	55 m6	140	110	280	35	674	24	1035	1150	107	216	252	116	2 x M63 x 1.5
280M	457	85	542	547	419	540	190	291	75 m6	60 m6	140	140	280	35	674	24	1035	1180	107	216	252	116	2 x M63 x 1.5
315S (2P)	508	120	628	620	406	570	216	433	65 m6	65 m6	140	140	315	49	870	28	1190	1335	147	300	358	197	2 x M63 x 1.5
315S	508	120	628	620	406	570	216	433	80 m6	80 m6	170	170	315	49	870	28	1220	1395	147	300	358	197	2 x M63 x 1.5
315M (2P)	508	120	628	620	547	680	216	492	65 m6	65 m6	140	140	315	49	870	28	1300	1445	147	300	358	197	2 x M63 x 1.5
315M	508	120	628	620	457*	680	216	492	80 m6	80 m6	170	170	315	49	870	28	1330	1505	147	300	358	197	2 x M63 x 1.5
315L (2P)	508	120	628	620	457*	680	216	441	65 m6	65 m6	140	140	315	49	870	28	1300	1445	105	300	358	197	2 x M63 x 1.5
315L	508	120	628	620	457*	680	216	441	80 m6	80 m6	170	170	315	49	870	28	1330	1505	105	300	358	197	2 x M63 x 1.5
355M (2P)	610	116	726	710	500*	750	254	-	80 m6	-	170	-	355	52	1010	28	1525	-	327	360	487	200	2 x Ø70mm max
355M	610	116	726	710	500*	750	254	-	100 m6	-	210	-	355	52	1010	28	1565	-	327	360	487	200	2 x Ø70mm max
355L (2P)	610	116	726	710	560*	750	254	-	80 m6	-	170	-	355	52	1010	28	1525	-	327	360	487	200	2 x Ø70mm max
355L	610	116	726	710	560*	750	254	-	100 m6	-	210	-	355	52	1010	28	1565	-	327	360	487	200	2 x Ø70mm max
400M	686	120	806	810	630*	1090	280	-	110 m6	-	210	-	400	45	1075	35	1881	-	362	430	485	225	2 x Ø100mm max
400L	686	120	806	810	630*	1090	280	-	110 m6	-	210	-	400	45	1075	35	1881	-	362	430	485	225	2 x Ø100mm max

All Dimensions are in mm

* Additional footholes on NDE

315S/M frame at 508mm centres from front holes

355M frame at 560mm centres from front holes

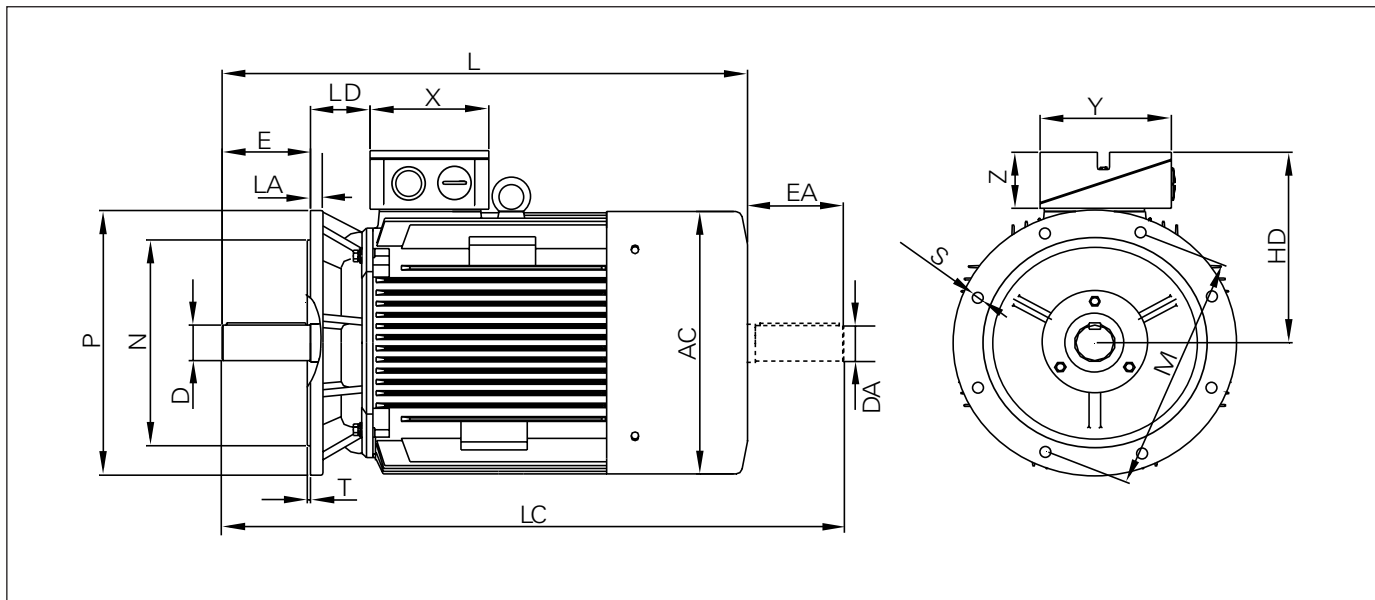
355L frame at 630mm centres from front holes

400M/L frame at 710mm centres from front holes

Cast Iron Series Dimensions: B5 Mounting



Section



Fenner FM:P Cast Iron Series 160 - 400 IM B5 Mounting

EN600034 (IEC-DIN)

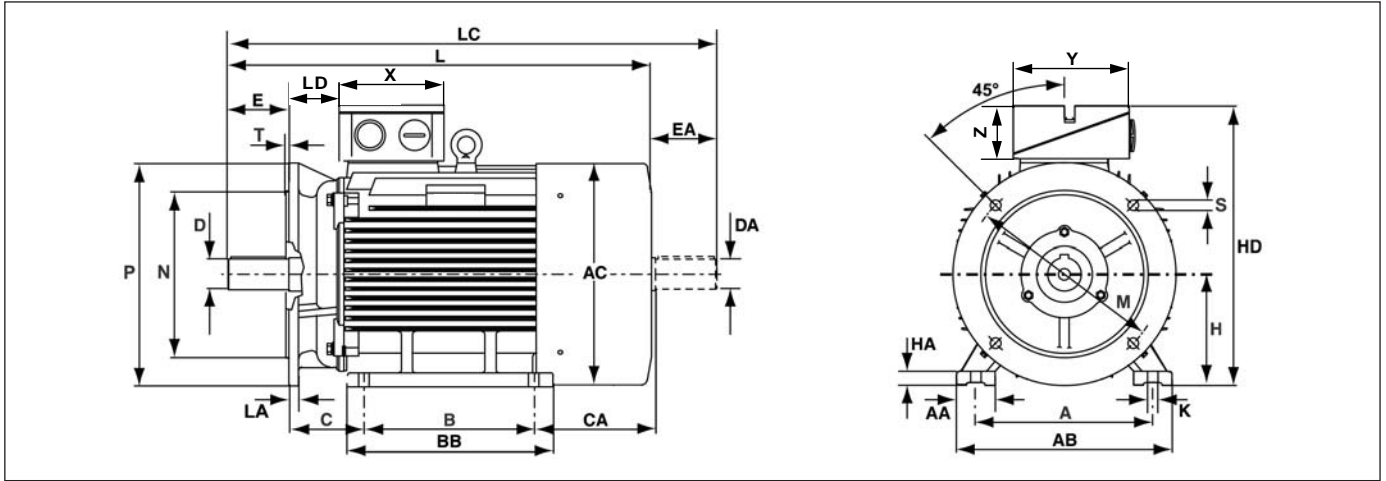
Frame	AC	D	E	HD	L	LA	LD	M	N	P	S	T	X	Y	Z	Cable Entry
160M	314	42k6	110	412	600	14.2	71.5	300	250 j6	350	4 x Ø19	5	147	128	83	2 x M40 x 1.5
160L	314	42k6	110	412	660	14.2	71.5	300	250 j6	350	4 x Ø19	5	147	128	83	2 x M40 x 1.5
180M	358	48k6	110	453	688	15.8	86.5	300	250 j6	350	4 x Ø19	5	147	128	83	2 x M40 x 1.5
180L	358	48k6	110	453	728	15.8	86.5	300	250 j6	350	4 x Ø19	5	147	128	83	2 x M40 x 1.5
200L (2P)	397	55m6	110	505	760	16.5	112	350	300 h6	400	4 x Ø19	5	188	208	95	2 x M50 x 1.5
200L	397	55m6	110	505	760	16.5	112	350	300 h6	400	4 x Ø19	5	188	208	95	2 x M50 x 1.5
225S	446	60m6	140	549	807	20.1	91	400	350 h6	450	8 x Ø19	5	188	208	95	2 x M50 x 1.5
225M (2P)	446	55m6	110	549	802	20.1	112	400	350 h6	450	8 x Ø19	5	188	208	95	2 x M50 x 1.5
225M	446	60m6	140	549	832	20.1	91	400	350 h6	450	8 x Ø19	5	188	208	95	2 x M50 x 1.5
250M (2P)	485	60m6	140	617	910	22.5	98	500	450 h6	550	8 x Ø19	5	216	252	116	2 x M63 x 1.5
250M	485	65m6	140	617	910	22.5	98	500	450 h6	550	8 x Ø19	5	216	252	116	2 x M63 x 1.5
280S (2P)	547	65m6	140	674	974	20.6	107	500	450 h6	550	8 x Ø19	5	216	252	116	2 x M63 x 1.5
280S	547	75m6	140	674	982	20.6	107	500	450 h6	550	8 x Ø19	5	216	252	116	2 x M63 x 1.5
280M (2P)	547	65m6	140	674	1035	20.6	107	500	450 h6	550	8 x Ø19	5	216	252	116	2 x M63 x 1.5
280M	547	75m6	140	674	1035	20.6	107	500	450 h6	550	8 x Ø19	5	216	252	116	2 x M63 x 1.5
315S (2P)	620	65m6	140	870	1190	22.6	147	600	550 h6	660	8 x Ø24	6	300	358	197	2 x M63 x 1.5
315S	620	80m6	170	870	1220	22.6	147	600	550 h6	660	8 x Ø24	6	300	358	197	2 x M63 x 1.5
315M (2P)	620	65m6	140	870	1300	22.6	147	600	550 h6	660	8 x Ø24	6	300	358	197	2 x M63 x 1.5
315M	620	80m6	170	870	1330	22.6	147	600	550 h6	660	8 x Ø24	6	300	358	197	2 x M63 x 1.5
315L (2P)	620	65m6	140	870	1300	22.6	105	600	550 h6	660	8 x Ø24	6	300	358	197	2 x M63 x 1.5
315L	620	80m6	170	870	1330	22.6	105	600	550 h6	660	8 x Ø24	6	300	358	197	2 x M63 x 1.5
355M (2P)	710	80m6	170	1010	1525	24.5	327	740	680 h6	800	8 x Ø24	6	360	487	200	2 x Ø70mm max
355M	710	100m6	210	1010	1565	24.5	327	740	680 h6	800	8 x Ø24	6	360	487	200	2 x Ø70mm max
355L (2P)	710	80m6	170	1010	1525	24.5	327	740	680 h6	800	8 x Ø24	6	360	487	200	2 x Ø70mm max
355L	710	100m6	210	1010	1565	24.5	327	740	680 h6	800	8 x Ø24	6	360	487	200	2 x Ø70mm max
400M	810	110m6	210	1075	1881	24.5	362	940	880 h6	1000	8 x Ø28	6	430	485	225	2 x Ø100mm max
400L	810	110m6	210	1075	1881	24.5	362	940	880 h6	1000	8 x Ø28	6	430	485	225	2 x Ø100mm max

All Dimensions are in mm

- * Additional footholes on NDE
 - 315S/M frame at 508mm centres from front holes
 - 355M frame at 560mm centres from front holes
 - 355L frame at 630mm centres from front holes
 - 400M/L frame at 710mm centres from front holes

ELECTRIC MOTORS

Cast Iron Series Dimensions: B35 Mounting



Fenner FM:P Cast Iron Series 160 - 400 IM B35 Mounting

EN600034 (IEC-DIN)

Frame	A	AA	AB	AC	B	BB	C	D	E	H	HA	HD	K	L	LA	LD	M	N	P	S	T	Cable Entry
160M	254	65	314	314	210	260	108	42 k6	110	160	20	412	15	600	14.2	71.5	300	250 j6	350	4 x Ø19	5	2 x M40 x 1.5
160L	254	65	314	314	254	300	108	42 k6	110	160	20	412	15	660	14.2	71.5	300	250 j6	350	4 x Ø19	5	2 x M40 x 1.5
180M	279	70	350	358	241	310	121	48 k6	110	180	22	453	15	688	15.8	86.5	300	250 j6	350	4 x Ø19	5	2 x M40 x 1.5
180L	279	70	350	358	279	350	121	48 k6	110	180	22	453	15	728	15.8	86.5	300	250 j6	350	4 x Ø19	5	2 x M40 x 1.5
200L (2P)	318	70	390	397	305	369	133	55 m6	110	200	25	505	19	760	16.5	112	350	300 h6	400	4 x Ø19	5	2 x M50 x 1.5
200L	318	70	390	397	305	369	133	55 m6	110	200	25	505	19	760	16.5	112	350	300 h6	400	4 x Ø19	5	2 x M50 x 1.5
225S	356	75	431	446	286	368	149	60 m6	140	225	28	549	19	807	20.1	91	400	350 h6	450	8 x Ø19	5	2 x M50 x 1.5
225M (2P)	356	75	431	446	311	393	149	55 m6	110	225	28	549	19	802	20.1	112	400	350 h6	450	8 x Ø19	5	2 x M50 x 1.5
225M	356	75	431	446	311	393	149	60 m6	140	225	28	549	19	832	20.1	91	400	350 h6	450	8 x Ø19	5	2 x M50 x 1.5
250M (2P)	406	80	484	485	349	445	168	60 m6	140	250	30	617	24	910	22.5	98	500	450 h6	550	8 x Ø19	5	2 x M63 x 1.5
250M	406	80	484	485	349	445	168	65 m6	140	250	30	617	24	910	22.5	98	500	450 h6	550	8 x Ø19	5	2 x M63 x 1.5
280S (2P)	457	85	542	547	368	490	190	65 m6	140	280	35	674	24	974	20.6	107	500	450 h6	550	8 x Ø19	5	2 x M63 x 1.5
280S	457	85	542	547	368	490	190	75 m6	140	280	35	674	24	982	20.6	107	500	450 h6	550	8 x Ø19	5	2 x M63 x 1.5
280M (2P)	457	85	542	547	419	540	190	65 m6	140	280	35	674	24	1035	20.6	107	500	450 h6	550	8 x Ø19	5	2 x M63 x 1.5
280M	457	85	542	547	419	540	190	75 m6	140	280	35	674	24	1035	20.6	107	500	450 h6	550	8 x Ø19	5	2 x M63 x 1.5
315S (2P)	508	120	628	620	406	570	216	65 m6	140	315	49	870	28	1190	22.6	147	600	550 h6	660	8 x Ø24	6	2 x M63 x 1.5
315S	508	120	628	620	406	570	216	80 m6	170	315	49	870	28	1220	22.6	147	600	550 h6	660	8 x Ø24	6	2 x M63 x 1.5
315M (2P)	508	120	628	620	547	680	216	65 m6	140	315	49	870	28	1300	22.6	147	600	550 h6	660	8 x Ø24	6	2 x M63 x 1.5
315M	508	120	628	620	457*	680	216	80 m6	170	315	49	870	28	1330	22.6	147	600	550 h6	660	8 x Ø24	6	2 x M63 x 1.5
315L (2P)	508	120	628	620	457*	680	216	65 m6	140	315	49	870	28	1300	22.6	105	600	550 h6	660	8 x Ø24	6	2 x M63 x 1.5
315L	508	120	628	620	457*	680	216	80 m6	170	315	49	870	28	1330	22.6	105	600	550 h6	660	8 x Ø24	6	2 x M63 x 1.5
355M (2P)	610	116	726	710	500*	750	254	80 m6	170	355	52	1010	28	1525	24.5	327	740	680 h6	800	8 x Ø24	6	2 x Ø70mm max
355M	610	116	726	710	500*	750	254	100 m6	210	355	52	1010	28	1565	24.5	327	740	680 h6	800	8 x Ø24	6	2 x Ø70mm max
355L (2P)	610	116	726	710	560*	750	254	80 m6	170	355	52	1010	28	1525	24.5	327	740	680 h6	800	8 x Ø24	6	2 x Ø70mm max
355L	610	116	726	710	560*	750	254	100 m6	210	355	52	1010	28	1565	24.5	327	740	680 h6	800	8 x Ø24	6	2 x Ø70mm max
400M	686	120	806	810	630*	1090	280	110 m6	210	400	45	1075	35	1881	24.5	362	940	880 h6	1000	8 x Ø28	6	2 x Ø100mm max
400L	686	120	806	810	630*	1090	280	110 m6	210	400	45	1075	35	1881	24.5	362	940	880 h6	1000	8 x Ø28	6	2 x Ø100mm max

All Dimensions are in mm

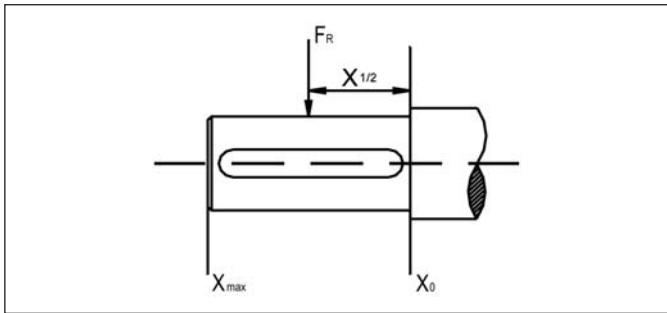
* Additional footholes on NDE

315S/M frame at 508mm centres from front holes

355M frame at 560mm centres from front holes

355L frame at 630mm centres from front holes

400M/L frame at 710mm centres from front holes



Where: D = diameter of the pulley (mm)
 P = power of the motor (kW)
 n = motor rated speed (Rev/min)
 k = belt tension factor, k=2 - 2.5 for V-belts
 FR(x) = permissible radial force (N)

Allowable Radial Loads for Horizontal and Vertically Mounted Fenner FM:P & FM:S Motors

The following tables give the permissible radial forces in Newton, assuming zero axial force ** and standard ball bearings. In case of higher radial force than given in the table, an enforced bearing should be ordered. The values are based on normal conditions at 50Hz and calculated at 20,000 working hours for the 2 pole motors and 40,000 working hours for 4, 6 and 8 pole motors. For 60Hz the value must be reduced by 10%.

$$D = \frac{1.9 \times 107 \times k \times P}{n \times FR (X_0 / X_{1/2} / X_{max})}$$

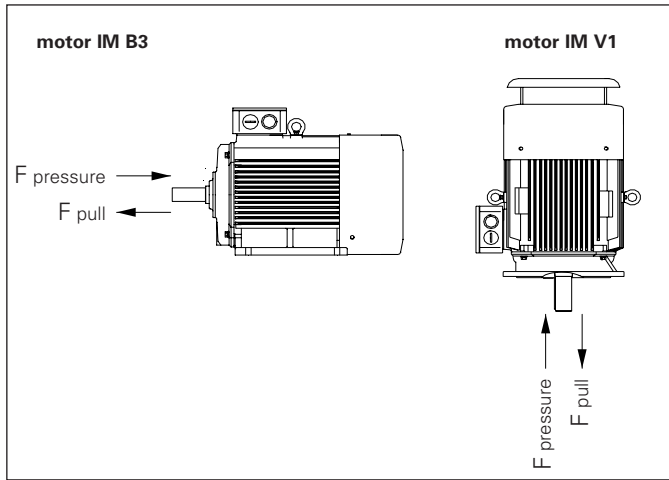
* = standard motors with enforced bearing arrangement
 ** = in case FA and FR apply both contact your local Fenner Authorised Distributor.

Permissible Radial Loads for Horizontal and Vertical

Frame Size	Pole	Maximum Radial Force (FR)		
		X0 mm	X1/2 mm	Xmax mm
56	2	250	180	100
	4	250	180	100
63	2	360	300	230
	4	360	300	230
71	2	470	400	320
	4	470	400	320
	6	470	400	320
80	2	670	610	550
	4	730	650	590
	6	830	750	680
	8	920	820	750
90	2	740	660	590
	4	800	710	630
	6	920	810	730
	8	1010	890	800
100	2	1030	920	820
	4	1110	990	890
	6	1270	1130	1020
	8	1400	1240	1120
112	2	1490	1330	1200
	4	1600	1430	1290
	6	1840	1640	1480
	8	2020	1800	1630
132	2	2160	1900	1690
	4	2330	2040	1820
	6	2670	2340	2080
	8	2940	2570	2290

Frame Size	Pole	Maximum Radial Force (FR)		
		X0 mm	X1/2 mm	Xmax mm
160	2	4487	3920	3481
	4	5653	4939	4385
	6	6471	5654	5020
	8	7123	6223	5525
180	2	6491	5772	5196
	4	8178	7272	6547
	6	9437	8466	7676
	8	10386	9318	8448
200	2	7060	6385	5828
	4	8896	8045	7342
	6	10183	9209	8405
	8	11208	10136	9251
225	2	8433	7704	7055
	4	10623	9355	8357
	6	12250	10866	9763
	8	13384	11786	10530
250	2	9573	8588	7787
	4	12061	10821	9811
	6	13807	12386	11231
	8	15196	13633	12361
280	2	9477	8565	7812
	4	17403	15738	14365
	6	19921	18016	16444
	8	21926	19829	18099
315	2	14073	13069	12199
	4	20399	18664	17200
	6	23352	21365	19689
	8	25702	23515	21671
355	2	13958	13155	12439
	4	28301	25862	23810
	6	32397	29605	27256
	8	35657	32584	29999
400	2	-	-	-
	4	37480	34605	32140
	6	42903	39613	36791
	8	47221	43600	40494

Permissible Axial Loads



Permissible Axial Loads for Horizontal and Vertical Fenner Motors

The following table gives the permissible axial forces in Newton, assuming zero radial force**. In this case the motor should be ordered with standard ball bearings.

If the axial force is greater than that given in the table, an angular contact bearing should be ordered. The values are based on normal conditions at 50 Hz and calculated at 20.000 working hours for two pole motors and 40.000 hours for 4, 6 and 8 pole motors. At 60Hz the values must be reduced by 10%.

Fpressure is calculated for a fixed bearing at the DE.

** If FR and FA both apply contact your local Fenner Authorised Distributor.

Permissible Axial Loads for Horizontal and Vertical FM:P Motors

Frame Size	Pole	Maximum Axial Force (FA)			
		B3 Fpressure	B3 Fpull	V1 Fpressure	V1 Fpull
56	2	200	200	230	180
	4	240	240	260	200
63	2	250	250	260	230
	4	280	280	300	260
71	2	270	270	290	255
	4	350	350	370	320
	6	440	440	460	420
80	2	380	380	400	360
	4	470	470	490	450
	6	590	590	620	560
	8	620	620	650	595
80	2	440	440	470	410
	4	550	550	600	510
	6	620	620	680	460
	8	640	640	700	580
100	2	610	610	670	570
	4	750	750	840	710
	6	880	880	970	820
	8	895	895	970	845
112	2	1220	1220	1300	1170
	4	1440	1440	1520	1370
	6	1650	1650	1740	1580
	8	1780	1780	1880	1710
132	2	1500	1500	1620	1430
	4	1780	1780	1970	1610
	6	1820	1820	2000	1660
	8	1920	1920	2100	1760

Frame Size	Pole	Maximum Axial Force (FA)			
		B3 Fpressure	B3 Fpull	V1 Fpressure	V1 Fpull
160	2	1650	1650	1950	1350
	4	2100	2100	2470	1720
	6	2450	2450	2800	2050
180	2	2100	2100	2450	1720
	4	2600	2600	3200	200
	6	4890	4390	3980	2280
200	2	5380	4830	4380	2550
	4	2400	2400	2940	1840
	6	3120	3120	3850	2390
225	2	3480	3480	4350	2610
	4	3950	3950	4810	3090
	6	2720	2720	3420	2020
	8	3480	3480	4370	2590
250	2	3890	3890	5040	2820
	4	4330	4330	5330	3330
	6	3100	3100	3940	2260
	8	3900	3900	5000	2800
280	2	4450	4450	5570	3230
	4	4950	4950	6380	3580
	6	5300	3100	6500	2100
	8	6300	4400	7800	3000
315	2	6700	4300	7900	2900
	4	7100	5020	9100	3520
	6	5900	3800	8000	2000
	8	7100	5100	10700	3150
355	2	7600	5800	11800	3500
	4	8100	6300	12500	4400
	6	6100	1850	14000	800
	8	9800	3900	18300	2500*
400	2	10500	4700	20700	3500*
	4	12500	6000	21500	3600*
	6	11200	3900	18500	1600*
	8	12500	4800	19500	2200*

* Standard motors with enforced bearing arrangement



Electrical Connections

Connection cables and earthing requirements should conform to IEE regulations.

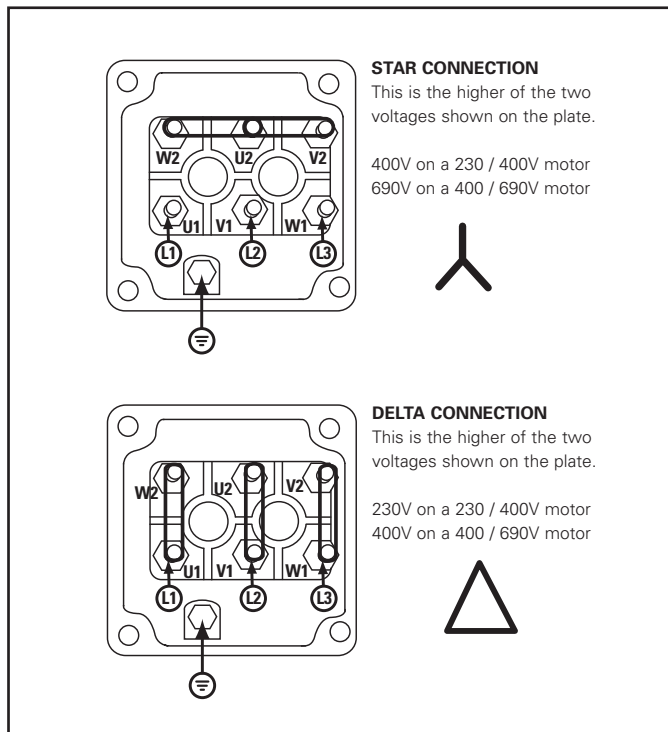
It is recommended that a suitable overload is fitted to protect the motor windings. Line fuses only protect the cables from short circuit not the motor.

Ensure that all terminals are tight and that the correct terminal arrangements are observed.

All motors are capable of running with two voltages.

Smaller motors are suitable for a 230/400V supply and larger motors are suitable for a 400/690V supply.

It is only possible to use a 400V Star/Delta starter on motors that are wound 400/690V - for this type of start, links must be removed.



Terminal Box Conduit Entry and Threads

Frame Size	Number of Entries	Entry Pitch
56	2	M20 x 1.5
63	2	M20 x 1.5
71	2	M20 x 1.5
80	2	M25 x 1.5
90	2	M25 x 1.5
100	2	M25 x 1.5
112	2	M32 x 1.5
132	2	M32 x 1.5
160	2	M40 x 1.5
180	2	M40 x 1.5
200	2	M50 x 1.5
225	2	M50 x 1.5
250	2	M63 x 1.5
280	2	M63 x 1.5
315	2	M63 x 1.5
355	2	Ø70mm max
400	2	Ø100mm max

Frame Size	Eye Bolt Sizes
56	None
63	None
71	None
80	None
90	None
100	M8
112	M8
132	M8
160	M12
180	M12
200	M16
225	M16
250	M20
280	M20
315	M30
355	M36
400	2 x M36

Terminal Marking and Direction of Rotation

In accordance with the current standard, if the supply is connected to the motor's stator terminals, which are marked U1, V1 and W1 and the phase sequence of supply is 1, 2 & 3, then the direction of rotation will be clockwise when viewed from the drive-end.