



"X" Series

6, 8, 10 & 12 inch
Submersible Electric Motor

MODEL
X-I

PERFORMANCE DATA

2POLE (3000RPM) PERFORMANCE AND APPLICATION DATA

| Motor Dia. (Inch) | kW | Phase | Volts | Winding Connection Resistance with Motor Leads (Ω) at 20°C | Rated Input | | Max Thrust Load (N) | | | Efficiency | | | Power Factor (%) | | | LRA | Code | Overload Protection | | Std Fuse Size | Dual Element Fuse Size |
|-------------------------|------|-------|-------|---|-------------|--------|------------------------------|------|------|------------|------|------|------------------|------|------|------|------|---------------------|---------------------------------------|---------------------|---------------------------------|
| | | | | | Amps | Watts | | | | F.L. | 3/4 | 1/2 | F.L. | 3/4 | 1/2 | | | Starter Size | Heater Code (Furnas Amb. Comp.) | | |
| 6 | 3.7 | 3 | 415 | DELTA 3.790 | 7.7 | 4830 | 15500 | 77.3 | 76.2 | 71.7 | 86.7 | 83.4 | 76.1 | 83.4 | 76.1 | 40 | G | 0 | K43 | 25 | 15 |
| 6 | 5.5 | 3 | 415 | DELTA 2.916 | 11.9 | 7110 | 15500 | 78.7 | 78.4 | 75.0 | 83.0 | 78.6 | 69.6 | 83.0 | 69.6 | 52 | F | 1 | K54 | 40 | 25 |
| 6 | 7.5 | 3 | 415 | DELTA 1.704 | 15.4 | 9270 | 15500 | 80.5 | 79.7 | 75.9 | 83.8 | 79.3 | 70.1 | 83.8 | 70.1 | 86 | G | 1 | K58 | 50 | 30 |
| 6 | 11 | 3 | 415 | DELTA 1.209 | 22.1 | 13600 | 15500 | 82.3 | 82.2 | 79.4 | 85.6 | 81.7 | 73.2 | 85.6 | 81.7 | 123 | G | 1-3/4 | K63 | 70 | 45 |
| 6 | 15 | 3 | 415 | DELTA 1.018 | 28.9 | 18330 | 15500 | 81.4 | 82.6 | 81.3 | 88.2 | 85.1 | 77.6 | 88.2 | 85.1 | 158 | G | 2 | K67 | 100 | 60 |
| 6 | 18.5 | 3 | 415 | DELTA 0.761 | 36.6 | 22690 | 15500 | 82.2 | 82.5 | 80.4 | 86.3 | 82.4 | 73.6 | 86.3 | 82.4 | 198 | G | 2 | K70 | 125 | 70 |
| 6 | 22.5 | 3 | 415 | DELTA 0.585 | 44.9 | 27330 | 15500 | 81.9 | 82.3 | 80.0 | 84.7 | 80.1 | 70.6 | 84.7 | 80.1 | 251 | G | 2-1/2 | K74 | 150 | 80 |
| 6 | 30 | 3 | 415 | DELTA 0.479 | 58.5 | 37070 | 22200 | 80.5 | 82.5 | 82.0 | 88.1 | 85.3 | 77.8 | 88.1 | 85.3 | 278 | E | 3 | K76 | 200 | 110 |
| 6 | 37 | 3 | 415 | DELTA 0.362 | 77.9 | 46740 | 22200 | 79.8 | 81.6 | 80.8 | 83.5 | 78.9 | 68.9 | 83.5 | 78.9 | 330 | E | 3 | K85 | 250 | 150 |
| 8 | 30 | 3 | 415 | DELTA 0.404 | 56.6 | 35400 | 44100 | 84.3 | 84.0 | 81.4 | 87.0 | 83.4 | 75.4 | 87.0 | 83.4 | 340 | G | 3 | K75 | 200 | 110 |
| 8 | 37 | 3 | 415 | DELTA 0.354 | 69.9 | 44190 | 44100 | 84.4 | 84.9 | 83.1 | 88.0 | 85.4 | 78.4 | 88.0 | 85.4 | 400 | G | 3 | K78 | 225 | 150 |
| 8 | 45 | 3 | 415 | DELTA 0.278 | 80.3 | 51450 | 44100 | 87.0 | 87.1 | 85.4 | 89.2 | 86.4 | 79.5 | 89.2 | 86.4 | 533 | H | 3-1/2 | K86 | 300 | 175 |
| 8 | 55 | 3 | 415 | DELTA 0.196 | 105.7 | 64460 | 44100 | 86.8 | 86.4 | 83.8 | 84.8 | 80.2 | 70.7 | 84.8 | 80.2 | 740 | J | 4 | K89 | 350 | 200 |
| 8 | 75 | 3 | 415 | DELTA 0.160 | 137.8 | 86140 | 44100 | 86.6 | 86.4 | 84.3 | 87.0 | 83.4 | 75.0 | 87.0 | 83.4 | 938 | H | 4-1/2 | K24 | 450 | 300 |
| 8 | 93 | 3 | 415 | DELTA 0.132 | 190.9 | 110220 | 44100 | 84.6 | 84.2 | 81.5 | 80.4 | 74.7 | 63.8 | 80.4 | 74.7 | 1114 | H | 4-1/2 | K28 | 600 | 350 |
| 8 | 110 | 3 | 415 | DELTA 0.115 | 238.9 | 134330 | 44100 | 83.3 | 82.7 | 79.5 | 78.2 | 71.9 | 60.7 | 78.2 | 71.9 | 1354 | H | 5 | K32 | 800 | 450 |
| 10 | 132 | 3 | 415 | DELTA 0.093 | 235.6 | 152160 | 44100 | 85.8 | 86.2 | 84.5 | 89.8 | 87.6 | 81.5 | 89.8 | 87.6 | 1380 | G | 5 | K32 | 800 | 450 |
| 10 | 150 | 3 | 415 | DELTA 0.078 | 264.7 | 171490 | 44100 | 87.0 | 87.3 | 85.7 | 90.1 | 88.0 | 82.1 | 90.1 | 88.0 | 1610 | G | 6 | K23 | 900 | 500 |
| 10 | 185 | 3 | 415 | DELTA 0.078 | 335.9 | 218380 | 44100 | 85.4 | 87.0 | 86.8 | 90.5 | 89.5 | 85.3 | 90.5 | 89.5 | 1610 | E | 6 | K27 | 1200 | 600 |
| 12 | 220 | 3 | 415 | DELTA 0.039 | 396.2 | 252600 | 44100 | 88.6 | 88.1 | 85.8 | 88.7 | 85.2 | 77.3 | 88.7 | 85.2 | 2950 | H | 6 | K29 | 1200 | 700 |

Service Factor of 1.0

MODEL
X-I 0037

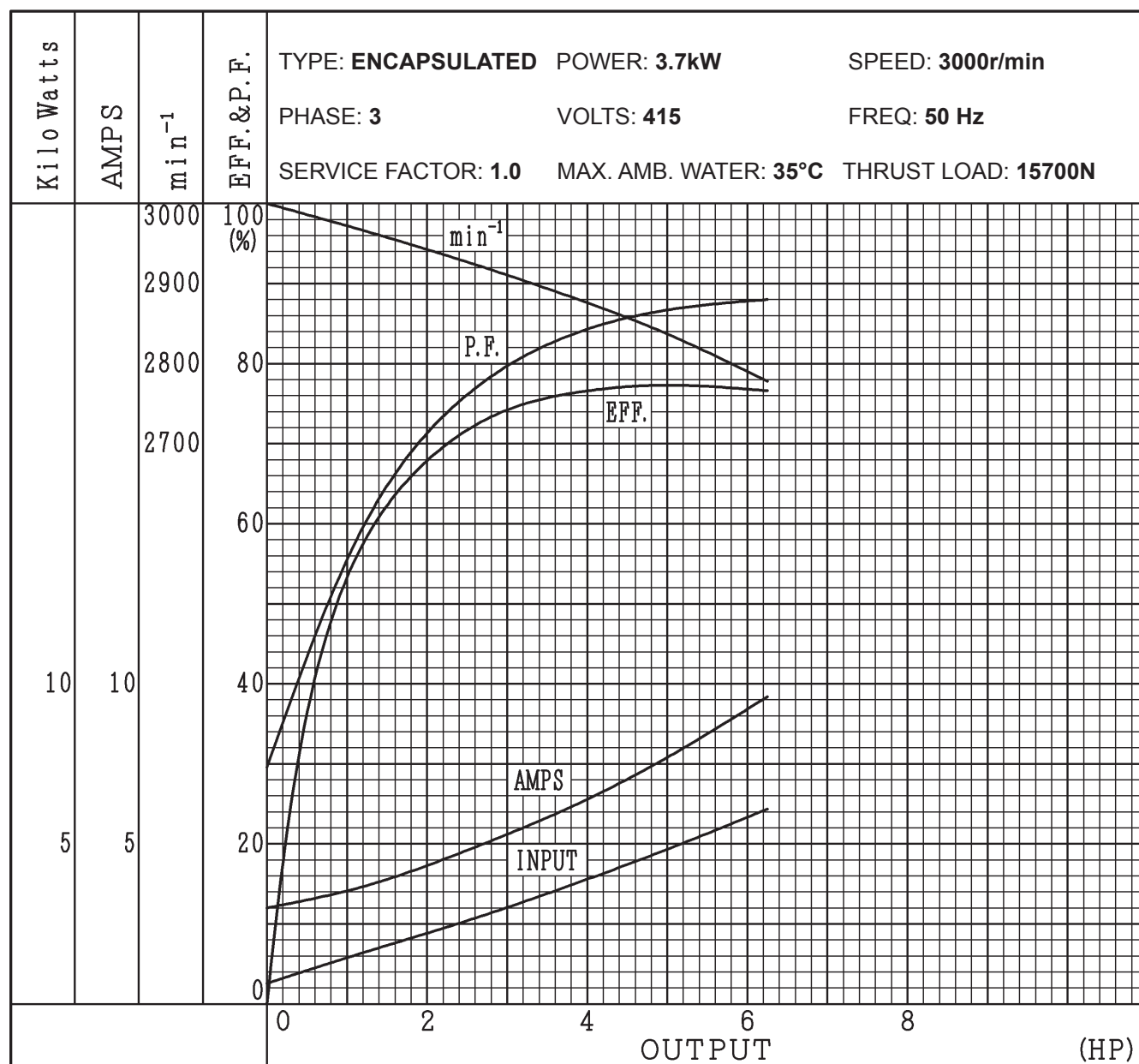
“X” Series

6 inch (150mm)

Submersible Electric Motor



PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (1.25) | 50% (2.5) | 75% (3.75) | 100% (5) | 125% (6.25) |
|-------------------|----------------|---------------|--------------|---------------|-------------|----------------|
| AMPS | 3.0 | 3.7 | 4.8 | 6.1 | 7.7 | 9.6 |
| EFF. | 0 | 58.4 | 71.7 | 76.2 | 77.3 | 76.6 |
| P.F. | 29.6 | 60.5 | 76.1 | 83.4 | 86.7 | 88.0 |
| min ⁻¹ | 3000 | 2965 | 2927 | 2885 | 2837 | 2778 |
| WATTS | 640 | 1600 | 2600 | 3670 | 4830 | 6090 |

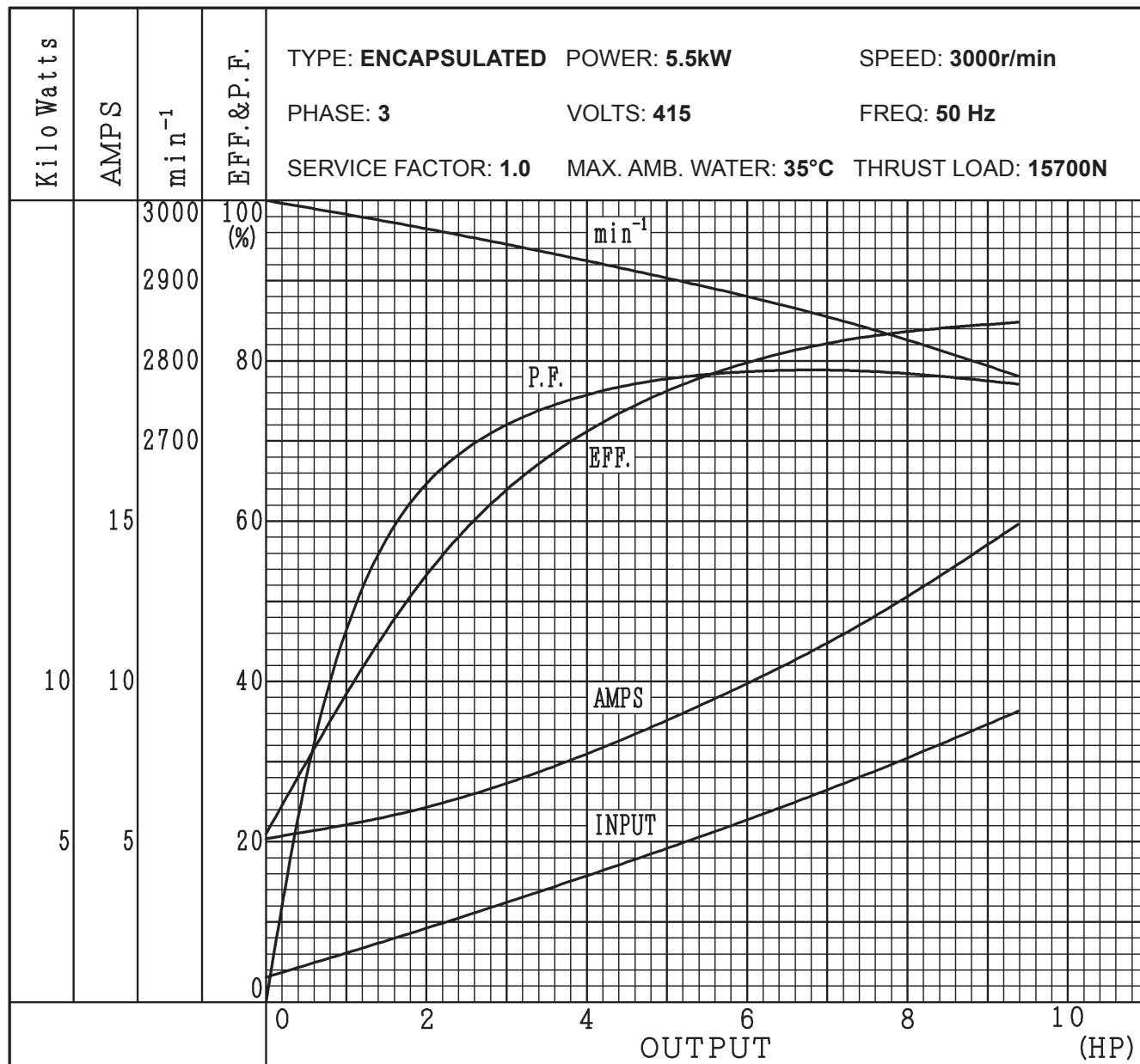
Full load Torque 12.6 N·m
Break Down Torque 28.7 N·m
Locked Rotor Torque 28.2 N·m
Locked Rotor Current 40 Amperes
KVA Code G



"X" Series
6 inch (150mm)
Submersible Electric Motor

MODEL
X-I 0055

PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (1.88) | 50% (3.75) | 75% (5.63) | 100% (7.5) | 125% (9.38) |
|-------------------|-------------|------------|------------|------------|------------|-------------|
| AMPS | 5.1 | 6.0 | 7.5 | 9.5 | 11.9 | 14.9 |
| EFF. | 0 | 63.3 | 75.0 | 78.4 | 78.7 | 77.1 |
| P. F. | 21.0 | 51.7 | 69.6 | 78.6 | 83.0 | 84.8 |
| min ⁻¹ | 3000 | 2967 | 2930 | 2889 | 2841 | 2781 |
| WATTS | 776 | 2210 | 3730 | 5350 | 7110 | 9070 |

Full load Torque 18.8 N·m
Break Down Torque 44.6 N·m
Locked Rotor Torque 37.7 N·m
Locked Rotor Current 52 Amperes
KVA Code F

MODEL
X-I 0075

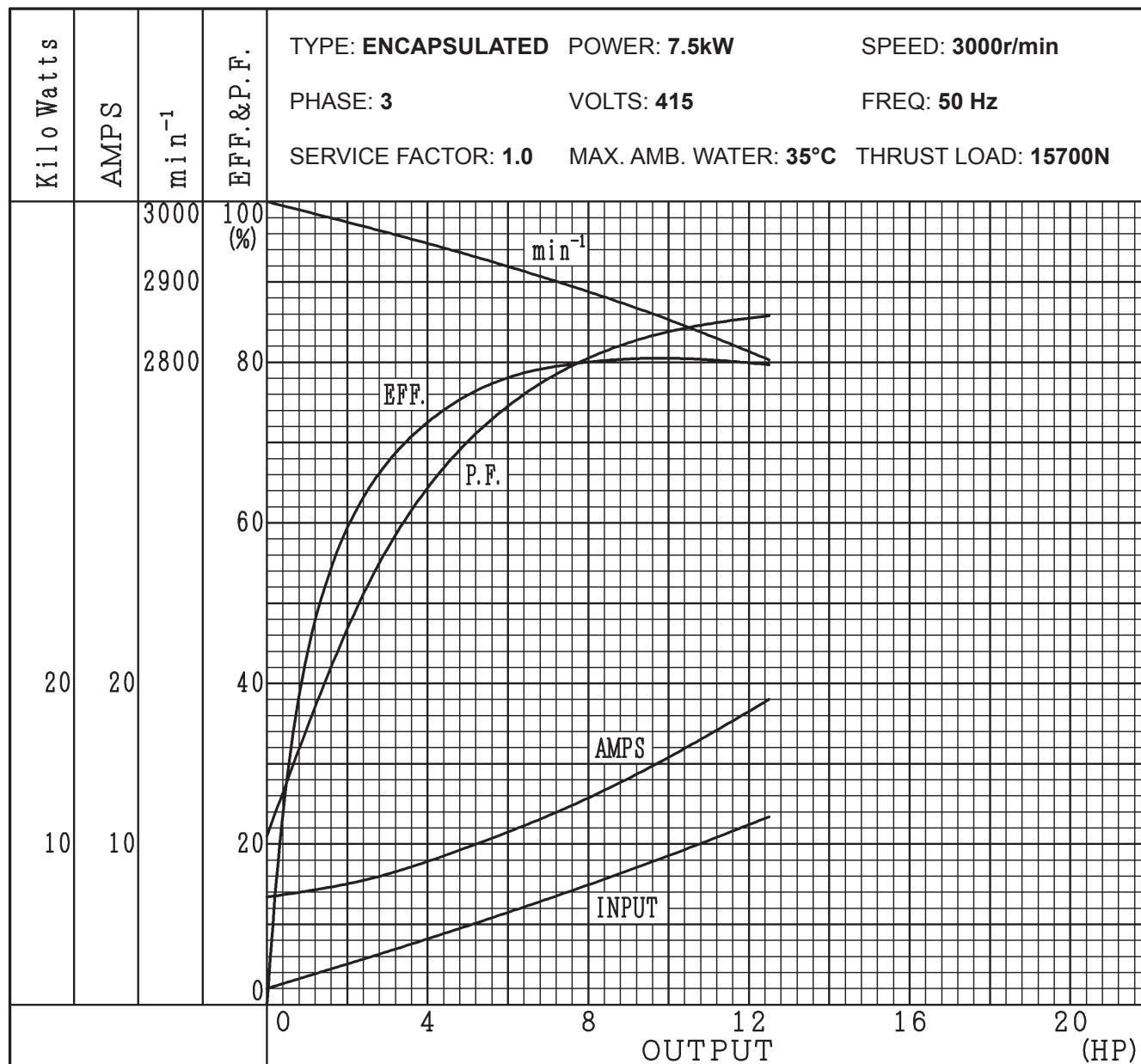
“X” Series

6 inch (150mm)

Submersible Electric Motor



PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (2.5) | 50% (5.0) | 75% (7.5) | 100% (10) | 125% (12.5) |
|-------------------|----------------|--------------|--------------|--------------|--------------|----------------|
| AMPS | 6.7 | 7.8 | 9.8 | 12.3 | 15.4 | 19.0 |
| EFF. | 0 | 64.0 | 75.9 | 79.7 | 80.5 | 79.7 |
| P.F. | 21.0 | 52.1 | 70.1 | 79.3 | 83.8 | 85.8 |
| min ⁻¹ | 3000 | 2968 | 2934 | 2896 | 2853 | 2803 |
| WATTS | 1008 | 2910 | 4910 | 7020 | 9270 | 11700 |

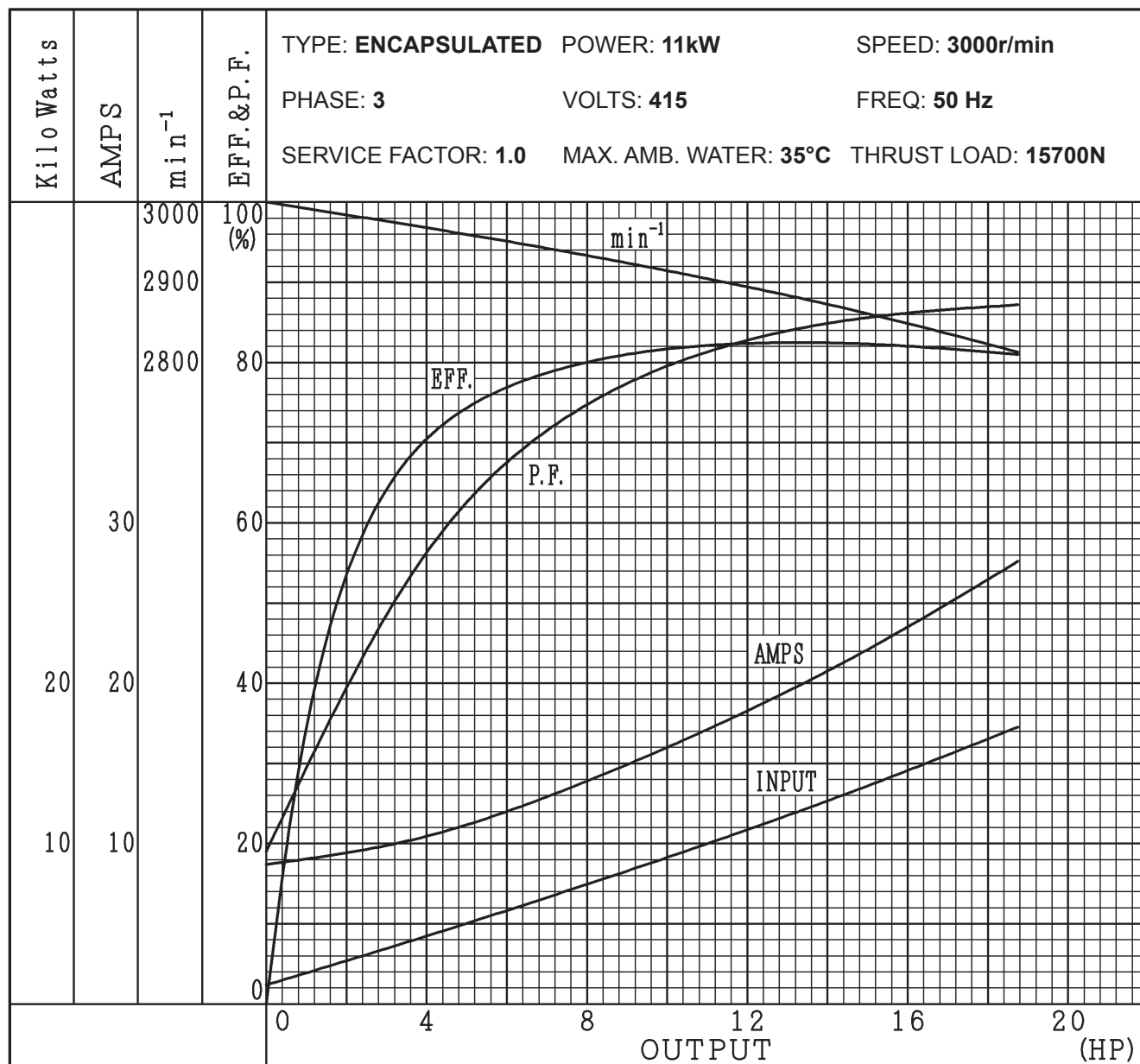
Full load Torque 25.0 N·m
Break Down Torque 73.3 N·m
Locked Rotor Torque 62.5 N·m
Locked Rotor Current 86 Amperes
KVA Code G



"X" Series
6 inch (150mm)
Submersible Electric Motor

MODEL
X-I 0110

PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (3.75) | 50% (7.5) | 75% (11.25) | 100% (15) | 125% (18.75) |
|-------------------|----------------|---------------|--------------|----------------|--------------|-----------------|
| AMPS | 8.7 | 10.3 | 13.4 | 17.4 | 22.1 | 27.6 |
| EFF. | 0 | 69.2 | 79.4 | 82.2 | 82.3 | 81.0 |
| P.F. | 19.0 | 54.5 | 73.2 | 81.7 | 85.6 | 87.2 |
| min ⁻¹ | 3000 | 2970 | 2938 | 2902 | 2861 | 2813 |
| WATTS | 1184 | 4040 | 7050 | 10210 | 13600 | 17270 |

Full load Torque 37.4 N·m
Break Down Torque 99.8 N·m
Locked Rotor Torque 91.5 N·m
Locked Rotor Current 123 Amperes
KVA Code G

MODEL
X-I 0150

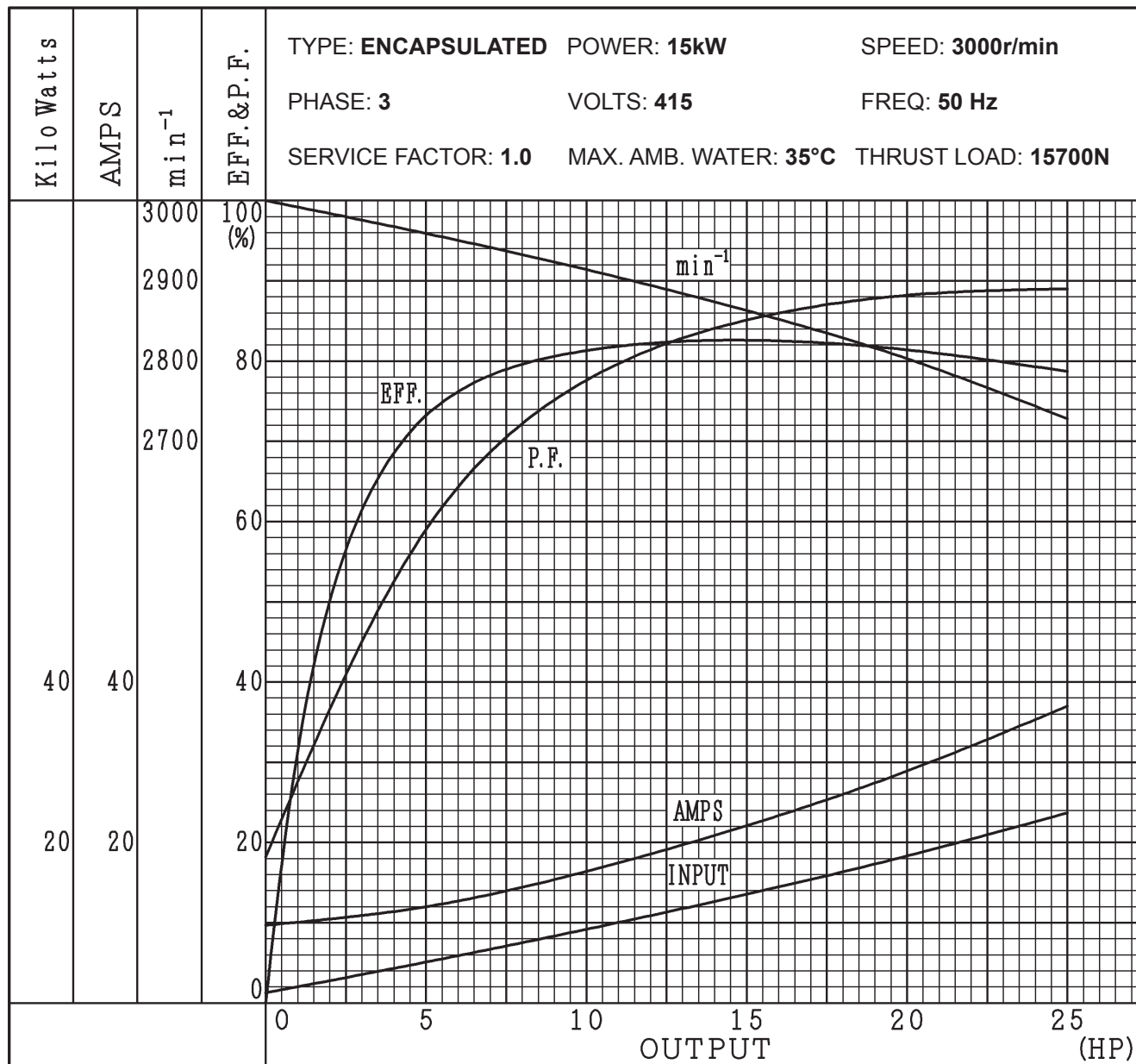
“X” Series

6 inch (150mm)

Submersible Electric Motor



PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (5) | 50% (10) | 75% (15) | 100% (20) | 125% (25) |
|-------------------|----------------|------------|-------------|-------------|--------------|--------------|
| AMPS | 9.7 | 12.0 | 16.4 | 22.1 | 28.9 | 37.0 |
| EFF. | 0 | 73.2 | 81.3 | 82.6 | 81.4 | 78.7 |
| P. F. | 18.2 | 59.0 | 77.6 | 85.1 | 88.2 | 89.0 |
| min ⁻¹ | 3000 | 2959 | 2914 | 2863 | 2803 | 2728 |
| WATTS | 1264 | 5100 | 9180 | 13550 | 18330 | 23700 |

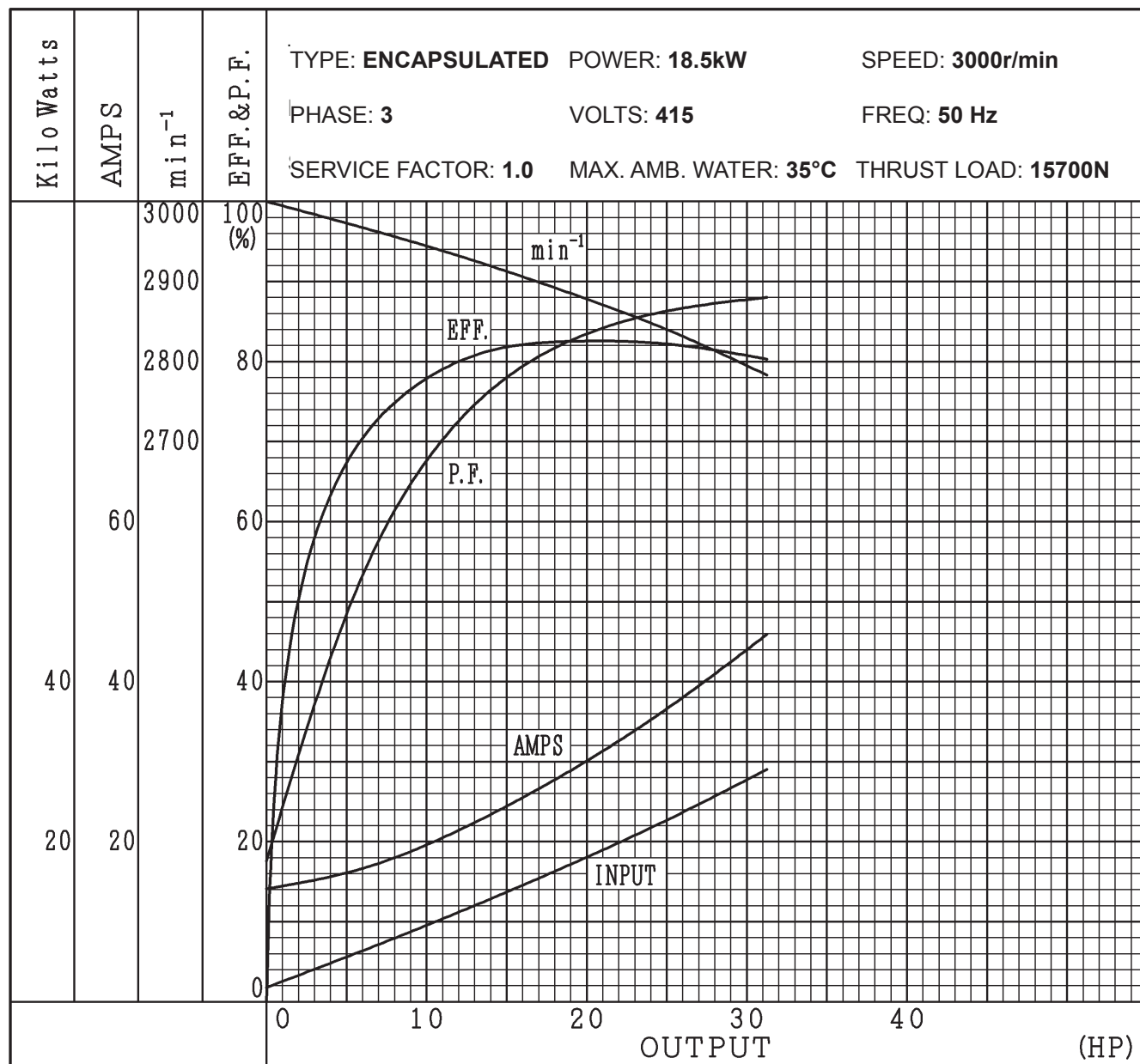
Full load Torque 50.9 N·m
 Break Down Torque 138 N·m
 Locked Rotor Torque 105 N·m
 Locked Rotor Current 158 Amperes
 KVA Code G



“X” Series
6 inch (150mm)
Submersible Electric Motor

MODEL
X-I 0185

PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (6.25) | 50% (12.5) | 75% (18.75) | 100% (25) | 125% (31.25) |
|-------------------|----------------|---------------|---------------|----------------|--------------|-----------------|
| AMPS | 14.1 | 16.8 | 21.9 | 28.6 | 36.6 | 45.9 |
| EFF. | 0 | 71.1 | 80.4 | 82.5 | 82.2 | 80.3 |
| P.F. | 17.6 | 54.4 | 73.6 | 82.4 | 86.3 | 88.0 |
| min ⁻¹ | 3000 | 2966 | 2929 | 2887 | 2840 | 2783 |
| WATTS | 1776 | 6560 | 11600 | 16950 | 22690 | 29030 |

Full load Torque 62.8 N·m
Break Down Torque 154 N·m
Locked Rotor Torque 131 N·m
Locked Rotor Current 198 Amperes
KVA Code G

MODEL
X-I 0220

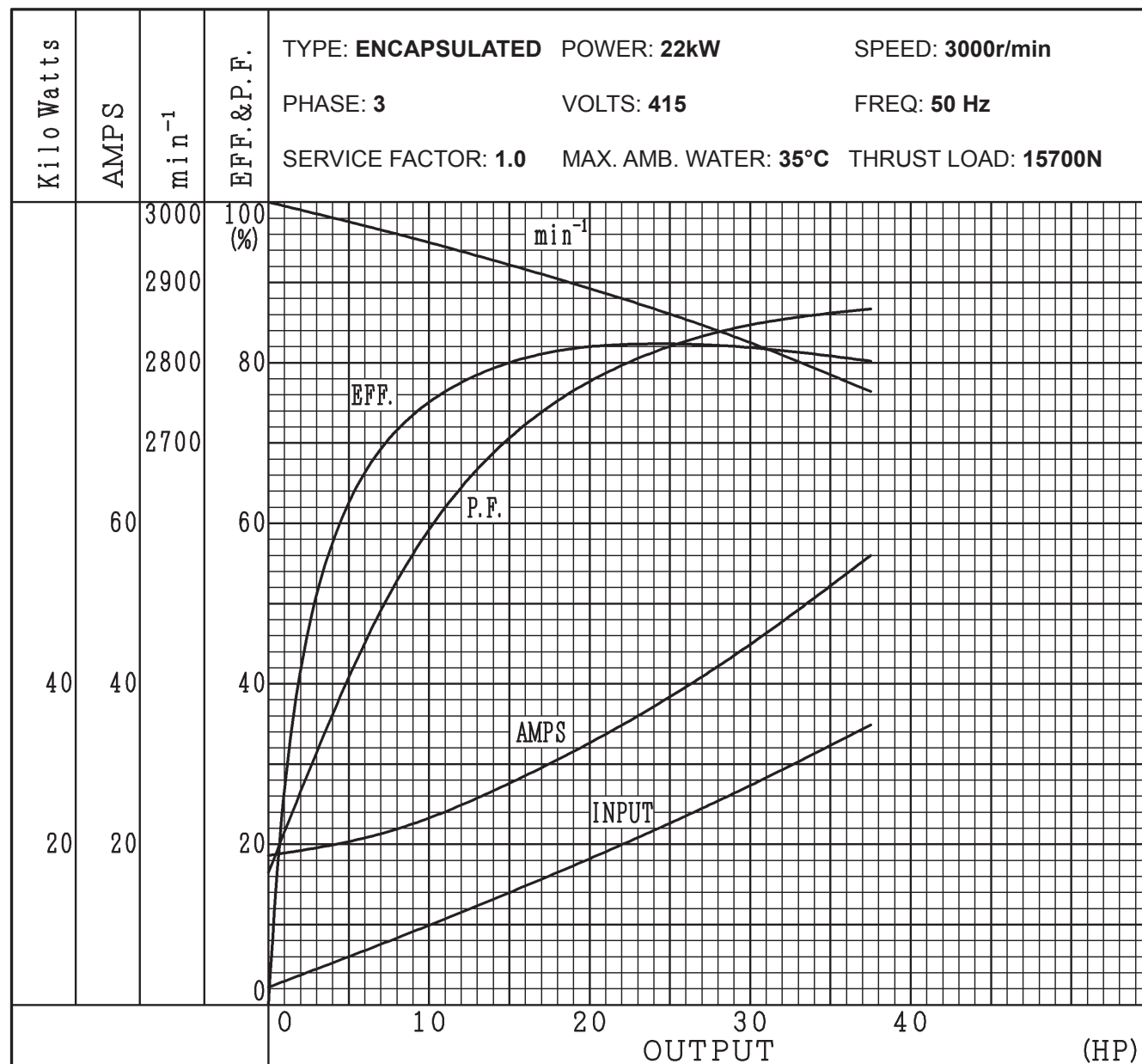
“X” Series

6 inch (150mm)

Submersible Electric Motor



PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (7.5) | 50% (15) | 75% (22.5) | 100% (30) | 125% (37.5) |
|-------------------|----------------|--------------|-------------|---------------|--------------|----------------|
| AMPS | 18.6 | 21.6 | 27.6 | 35.4 | 44.9 | 56.0 |
| EFF. | 0 | 70.5 | 80.0 | 82.3 | 81.9 | 80.2 |
| P.F. | 16.5 | 51.0 | 70.6 | 80.1 | 84.7 | 86.7 |
| min ⁻¹ | 3000 | 2963 | 2922 | 2877 | 2825 | 2764 |
| WATTS | 2200 | 7940 | 13990 | 20390 | 27330 | 34880 |

Full load Torque 75.7 N·m
Break Down Torque 190 N·m
Locked Rotor Torque 164 N·m
Locked Rotor Current 251 Amperes
KVA Code G



“X” Series

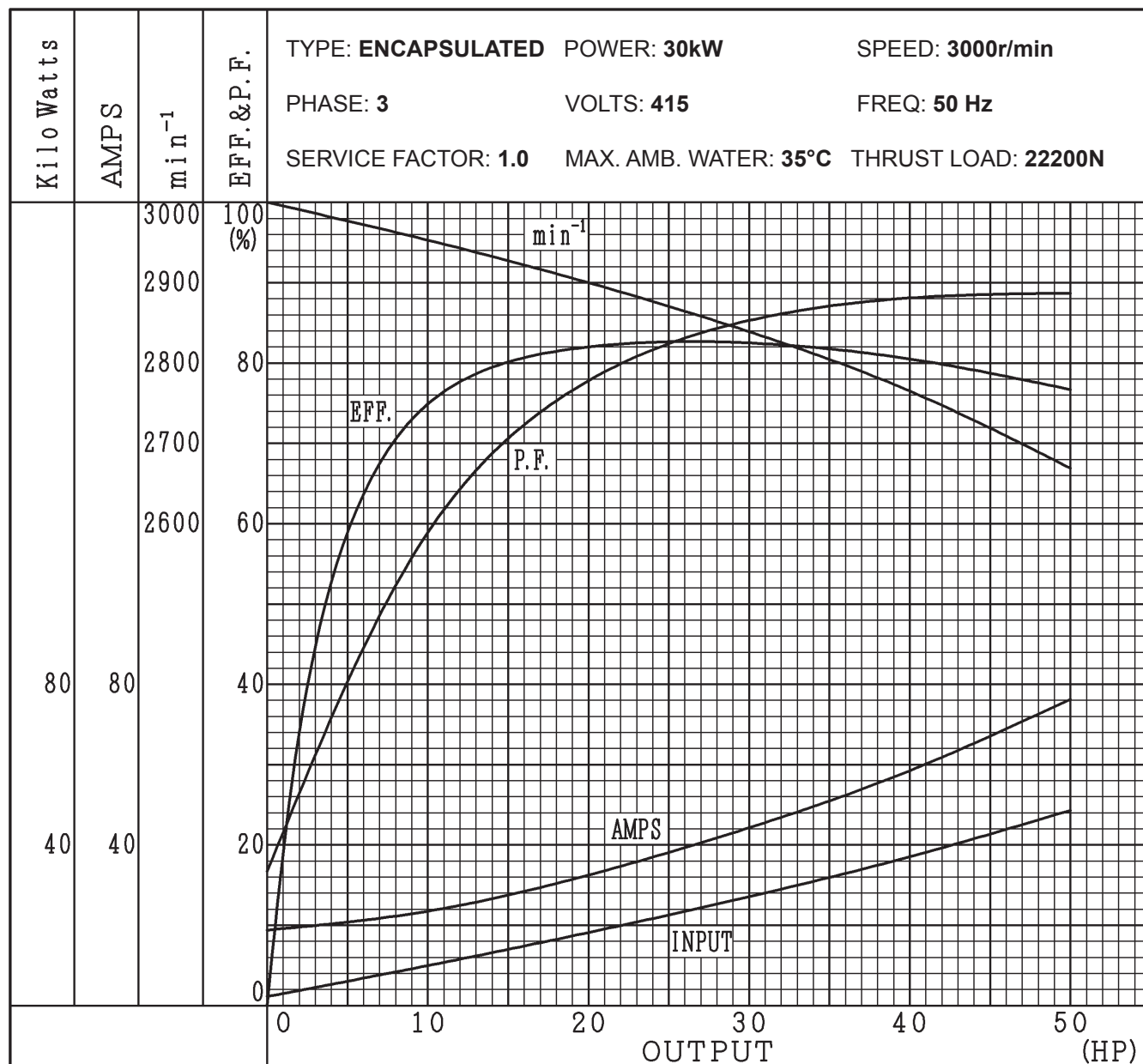
6 inch (150mm)

Submersible Electric Motor

MODEL

X-I 0300

PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (10) | 50% (20) | 75% (30) | 100% (40) | 125% (50) |
|-------------------|----------------|-------------|-------------|-------------|--------------|--------------|
| AMPS | 18.8 | 23.5 | 32.5 | 44.3 | 58.5 | 76.3 |
| EFF. | 0 | 74.9 | 82.0 | 82.5 | 80.5 | 76.7 |
| P.F. | 16.7 | 58.9 | 77.8 | 85.3 | 88.1 | 88.7 |
| min ⁻¹ | 3000 | 2953 | 2900 | 2839 | 2765 | 2669 |
| WATTS | 2260 | 9960 | 18200 | 27130 | 37070 | 48630 |

| | | |
|----------------------|-----|---------|
| Full load Torque | 103 | N·m |
| Break Down Torque | 237 | N·m |
| Locked Rotor Torque | 223 | N·m |
| Locked Rotor Current | 278 | Amperes |
| KVA Code | E | |

MODEL
X-I 0370

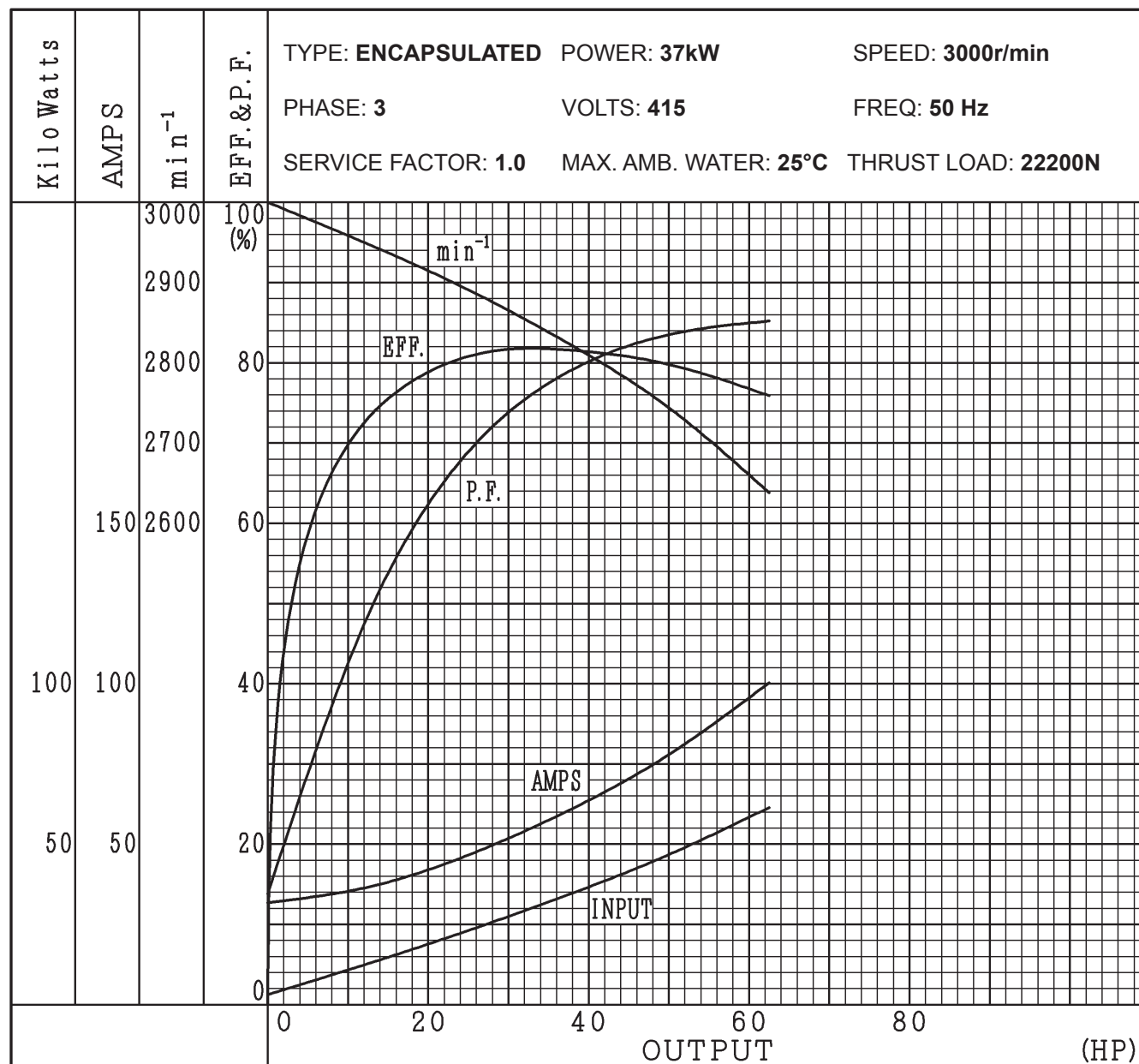
“X” Series

6 inch (150mm)

Submersible Electric Motor



PERFORMANCE DATA

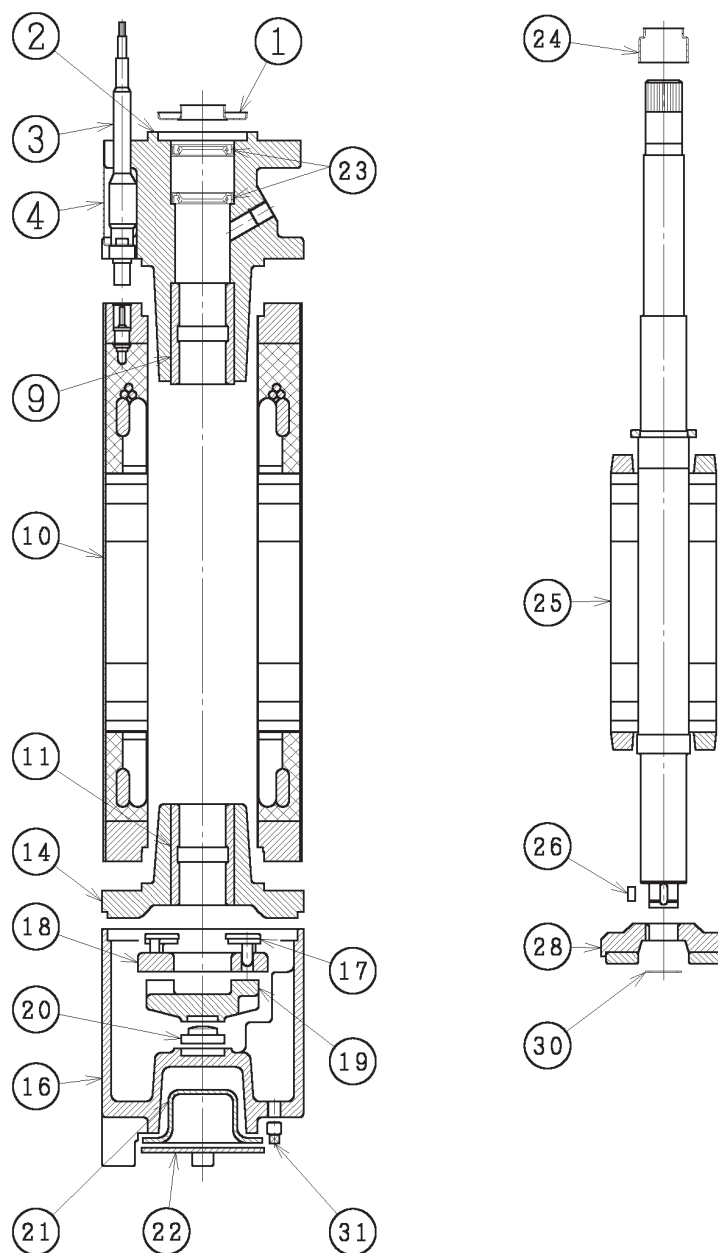


| LOAD (HP) | No load (-) | 25% (12.5) | 50% (25) | 75% (37.5) | 100% (50) | 125% (62.5) |
|-------------------|----------------|---------------|-------------|---------------|--------------|----------------|
| AMPS | 31.8 | 36.6 | 46.6 | 60.5 | 77.9 | 100.3 |
| EFF. | 0 | 73.1 | 80.8 | 81.6 | 79.8 | 75.9 |
| P.F. | 13.8 | 48.5 | 68.9 | 78.9 | 83.5 | 85.2 |
| min ⁻¹ | 3000 | 2948 | 2891 | 2824 | 2744 | 2638 |
| WATTS | 3140 | 12760 | 23080 | 34280 | 46740 | 61430 |

Full load Torque 130 N·m
 Break Down Torque 455 N·m
 Locked Rotor Torque 385 N·m
 Locked Rotor Current 330 Amperes
 KVA Code E

PARTS AND MATERIALS

SINGLE PHASE 3.7-11kW Cutaway



| No. | Parts Name | Material | Qty | No. | Parts Name | Material | Qty |
|-----|-----------------------------|---------------|-----|-----|----------------|---------------|-------|
| 1 | Slinger guide | CI | 1 | 20 | Thrust plate | SS | 1 |
| 2 | Upper end bracket | SS | 1 | 21 | Bellows | Rubber | 1 |
| 3 | 3.8m length motor lead wire | | 1 | 22 | Bellows cover | Carbon Steel | 1 |
| 4 | Lead wire cover | 304SS | 1 | 23 | Rubber seal | Rubber | 2 |
| 9 | Upper sleeve bearing | Carbon KC-673 | 1 | 24 | Slinger | SS | 1 |
| 10 | Stator assembly | 304SS | 1 | 25 | Rotor assembly | Steel / 420SS | 1 |
| 11 | Lower sleeve bearing | Carbon KC673 | 1 | 26 | Bearing key | Key Steel | 1 |
| 14 | Lower end bracket | CI | 1 | 28 | Thrust bearing | Carbon G348 | 1 |
| 16 | End cover | CI | 1 | 30 | Snap ring | SS | 1 |
| 17 | Pivot shoe (3.7kW -22kW) | SS | 3 | 31 | Drain plug | SS | 1 |
| 17 | Pivot shoe (30kW -37kW) | CI | 6 | 50 | Bolts. screws | SS | 1 set |
| 19 | Metal frame | CI | 1 | | | | |

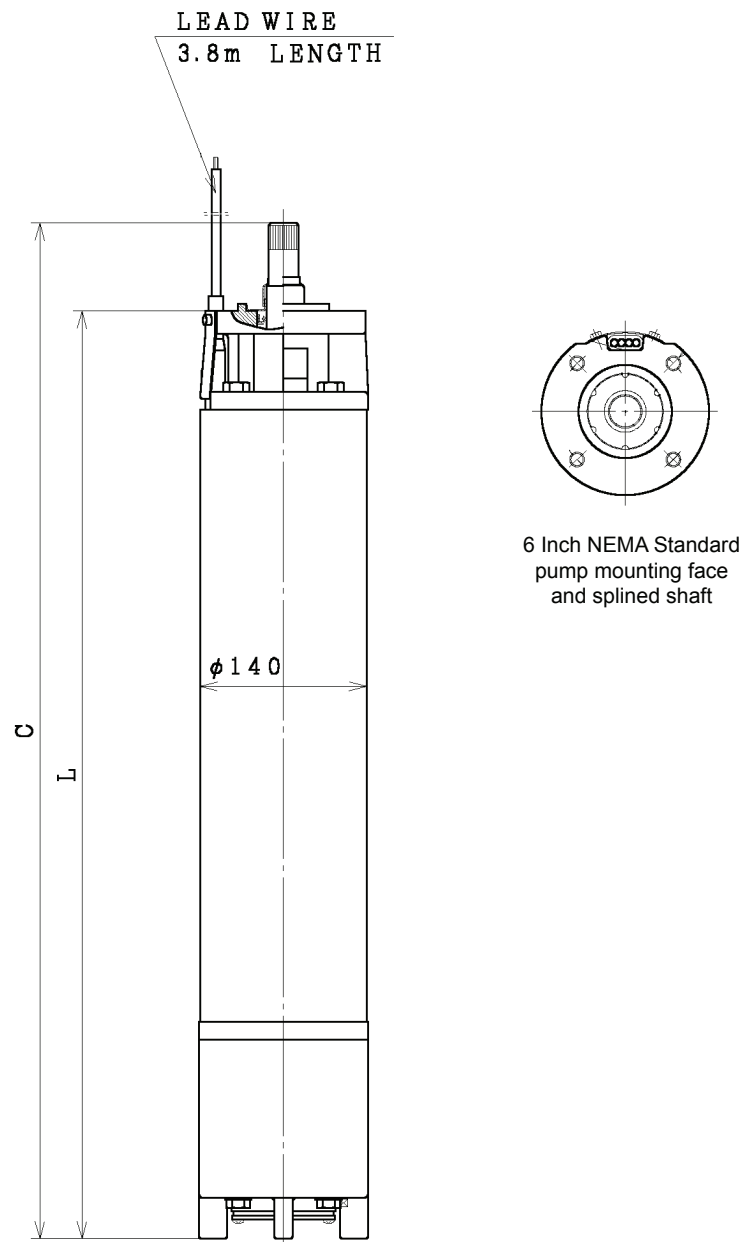
MODEL
6 Inch

"X" Series

6 inch (150mm)
Submersible Electric Motor



MOTOR DIMENSIONS



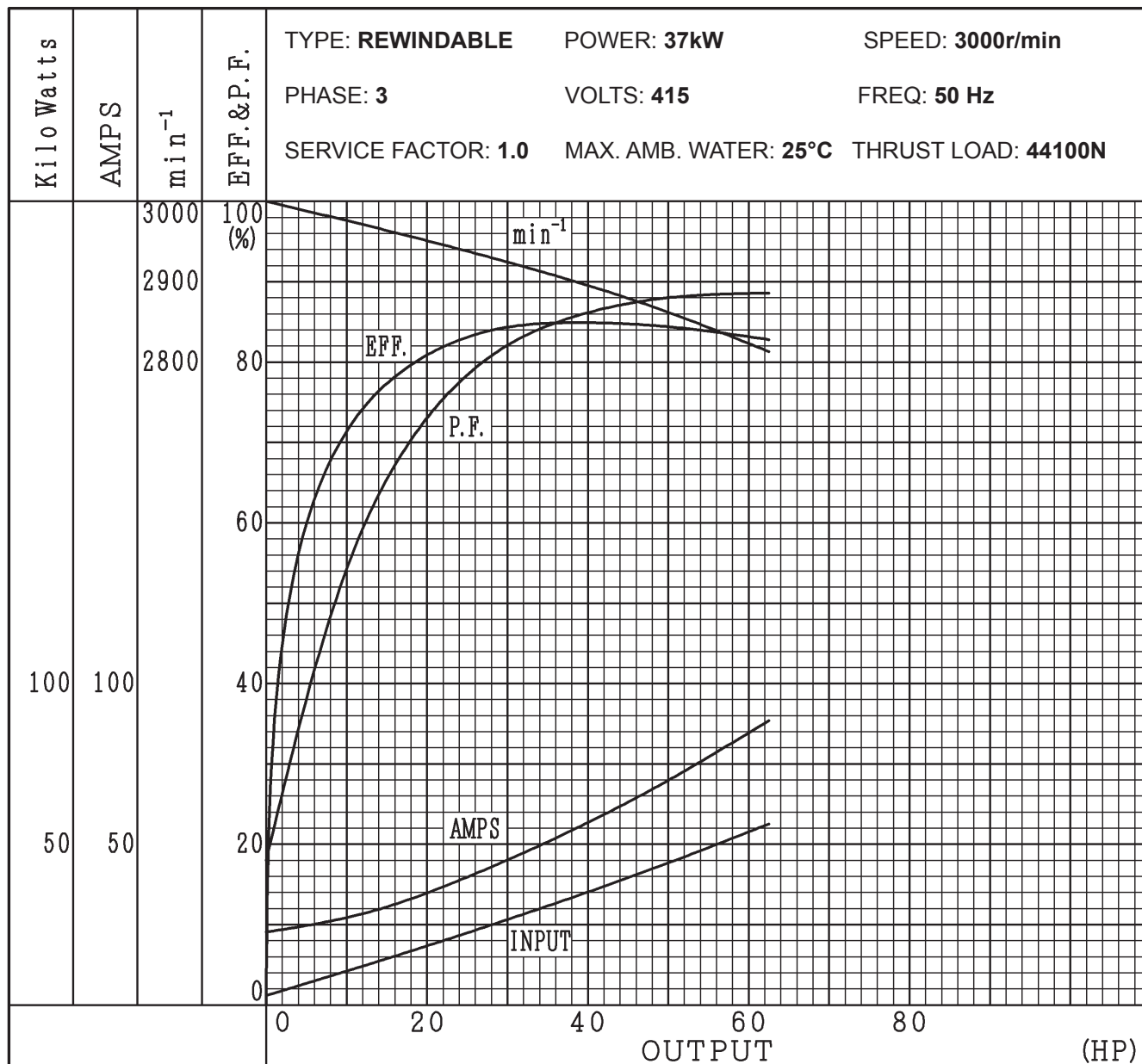
| Output | | Phase | Volts | C (mm) | L (mm) | Weight (kg) | Thrust Cap (N) | | Lead Wire Size | |
|--------|-----|-------|-------|--------|--------|-------------|----------------|------|-----------------|-----|
| kW | HP | | | | | | Down | Up | mm ² | AWG |
| 3.7 | 5 | 3 | 415 | 656 | 583 | 43 | 15700 | 1330 | 3.5 | #12 |
| 5.5 | 7.5 | 3 | 415 | 703 | 630 | 45 | 15700 | 1330 | 3.5 | #12 |
| 7.5 | 10 | 3 | 415 | 758 | 685 | 50 | 15700 | 1330 | 3.5 | #12 |
| 11 | 15 | 3 | 415 | 833 | 760 | 58 | 15700 | 1330 | 3.5 | #12 |
| 15 | 20 | 3 | 415 | 873 | 800 | 62 | 15700 | 1330 | 3.5 | #12 |
| 18.5 | 25 | 3 | 415 | 993 | 920 | 73 | 15700 | 1330 | 3.5 | #12 |
| 22 | 30 | 3 | 415 | 1043 | 970 | 80 | 15700 | 1330 | 3.5 | #12 |
| 30 | 40 | 3 | 415 | 1103 | 1030 | 90 | 22200 | 1330 | 3.5 | #12 |
| 37 | 50 | 3 | 415 | 1133 | 1060 | 90 | 22200 | 1330 | 5.5 | #10 |



"X" Series
8 inch (200mm)
Submersible Electric Motor

MODEL
X-I 037A

PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (12.5) | 50% (25) | 75% (37.5) | 100% (50) | 125% (62.5) |
|-------------------|----------------|---------------|-------------|---------------|--------------|----------------|
| AMPS | 22.7 | 28.7 | 39.8 | 53.7 | 69.9 | 88.5 |
| EFF. | 0 | 74.8 | 83.1 | 84.9 | 84.4 | 82.8 |
| P.F. | 18.0 | 60.4 | 78.4 | 85.4 | 88.0 | 88.6 |
| min ⁻¹ | 3000 | 2970 | 2938 | 2903 | 2862 | 2813 |
| WATTS | 2940 | 12470 | 22440 | 32950 | 44190 | 56310 |

| | | |
|----------------------|-----|---------|
| Full load Torque | 124 | N·m |
| Break Down Torque | 311 | N·m |
| Locked Rotor Torque | 231 | N·m |
| Locked Rotor Current | 400 | Amperes |
| KVA Code | G | |

MODEL
X-I 0450

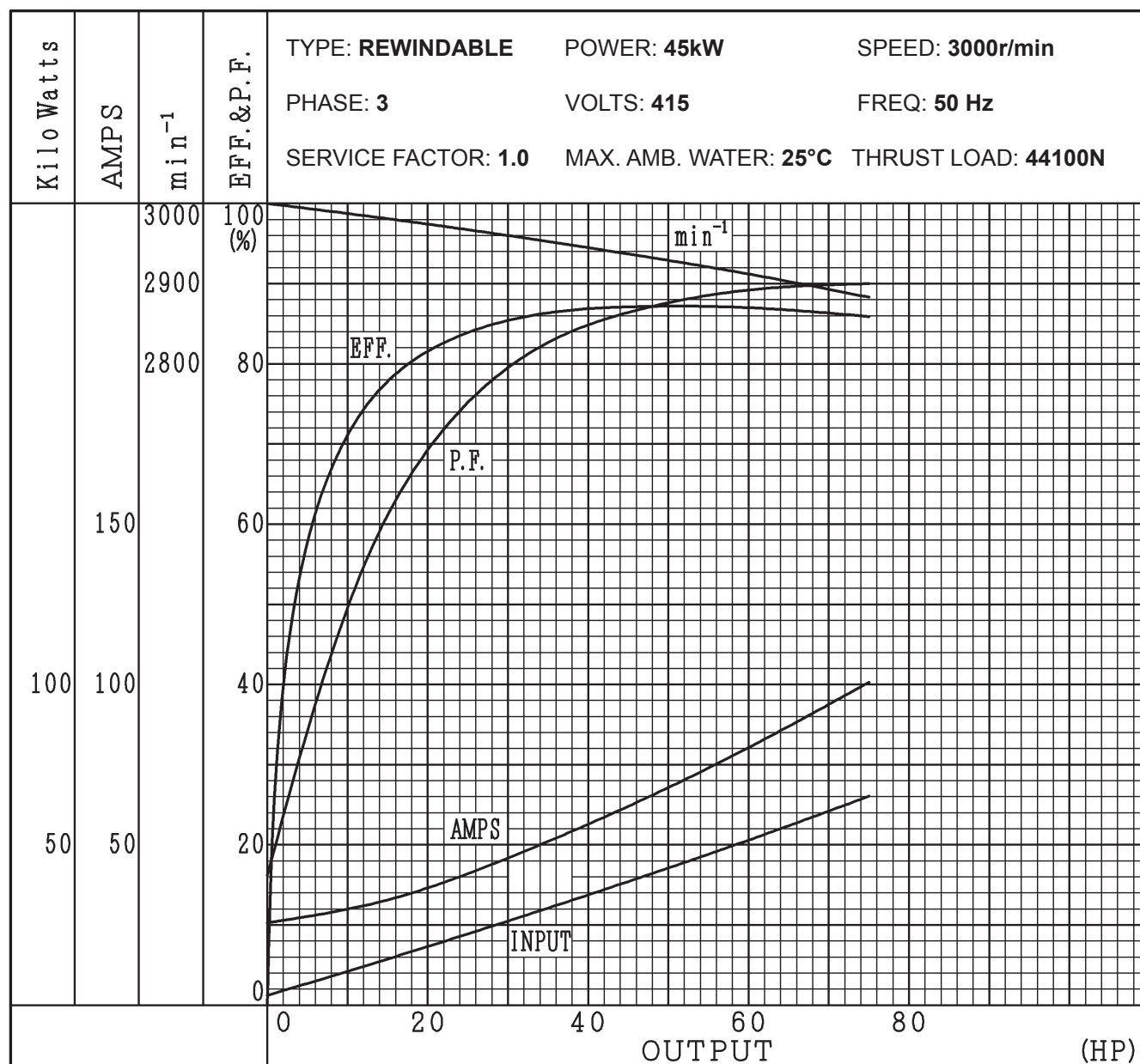
“X” Series

8 inch (200mm)

Submersible Electric Motor



PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (15) | 50% (30) | 75% (45) | 100% (60) | 125% (75) |
|-------------------|-------------|----------|----------|----------|-----------|-----------|
| AMPS | 25.7 | 32.8 | 45.9 | 62.0 | 80.3 | 100.7 |
| EFF. | 0 | 77.8 | 85.4 | 87.1 | 87.0 | 85.9 |
| P. F. | 16.2 | 61.1 | 79.5 | 86.4 | 89.2 | 90.0 |
| min ⁻¹ | 3000 | 2981 | 2960 | 2937 | 2912 | 2883 |
| WATTS | 3000 | 14380 | 26210 | 38540 | 51450 | 65130 |

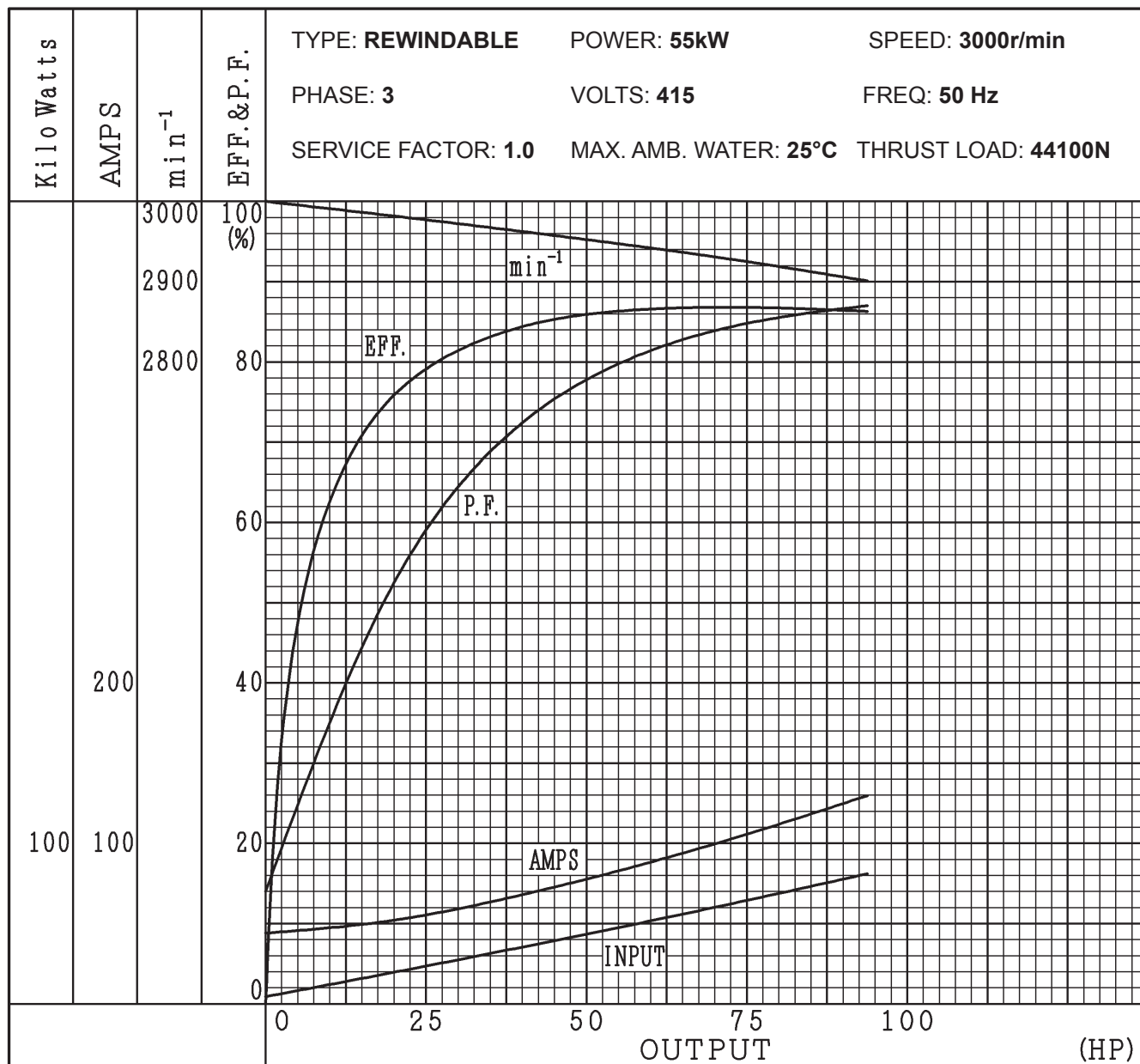
Full load Torque 147 N·m
 Break Down Torque 432 N·m
 Locked Rotor Torque 251 N·m
 Locked Rotor Current 533 Amperes
 KVA Code H



"X" Series
8 inch (200mm)
Submersible Electric Motor

MODEL
X-I 0550

PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (18.75) | 50% (37.5) | 75% (56.25) | 100% (75) | 125% (93.75) |
|-------------------|----------------|----------------|---------------|----------------|--------------|-----------------|
| AMPS | 44.1 | 51.4 | 65.7 | 84.2 | 105.7 | 129.7 |
| EFF. | 0 | 74.8 | 83.8 | 86.4 | 86.8 | 86.3 |
| P. F. | 14.1 | 50.6 | 70.7 | 80.2 | 84.8 | 87.0 |
| min ⁻¹ | 3000 | 2983 | 2965 | 2946 | 2925 | 2901 |
| WATTS | 4480 | 18700 | 33380 | 48570 | 64460 | 81040 |

| | | |
|----------------------|-----|---------|
| Full load Torque | 183 | N·m |
| Break Down Torque | 716 | N·m |
| Locked Rotor Torque | 345 | N·m |
| Locked Rotor Current | 740 | Amperes |
| KVA Code | J | |

MODEL
X-I 0750

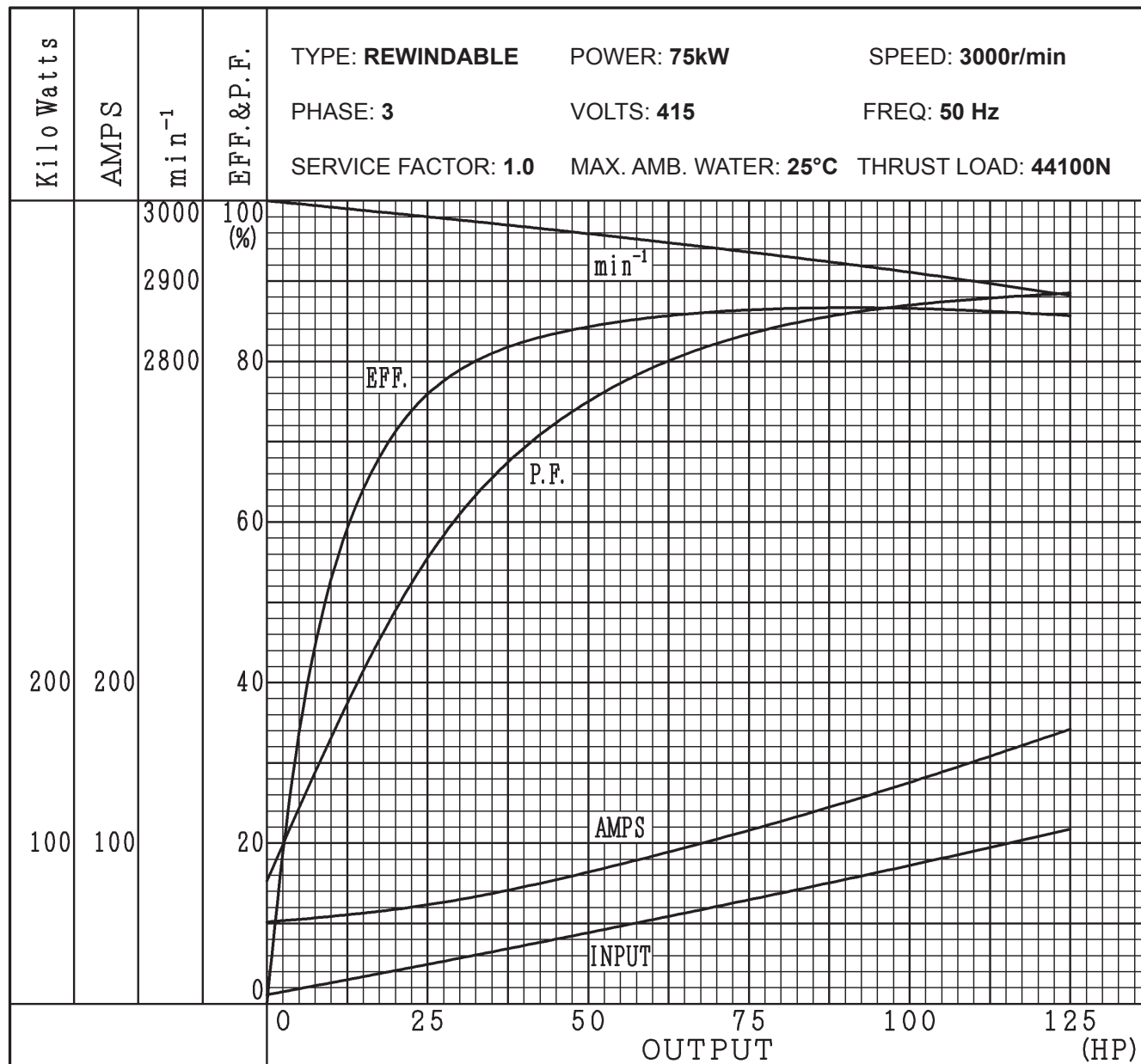
“X” Series

8 inch (200mm)

Submersible Electric Motor



PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (25) | 50% (50) | 75% (75) | 100% (100) | 125% (125) |
|-------------------|----------------|-------------|-------------|-------------|---------------|---------------|
| AMPS | 50.9 | 61.6 | 82.0 | 108.0 | 137.8 | 171.0 |
| EFF. | 0 | 75.9 | 84.3 | 86.4 | 86.6 | 85.7 |
| P. F. | 15.3 | 55.5 | 75.0 | 83.4 | 87.0 | 88.5 |
| min ⁻¹ | 3000 | 2980 | 2959 | 2936 | 2911 | 2882 |
| WATTS | 5600 | 24570 | 44250 | 64760 | 86140 | 108810 |

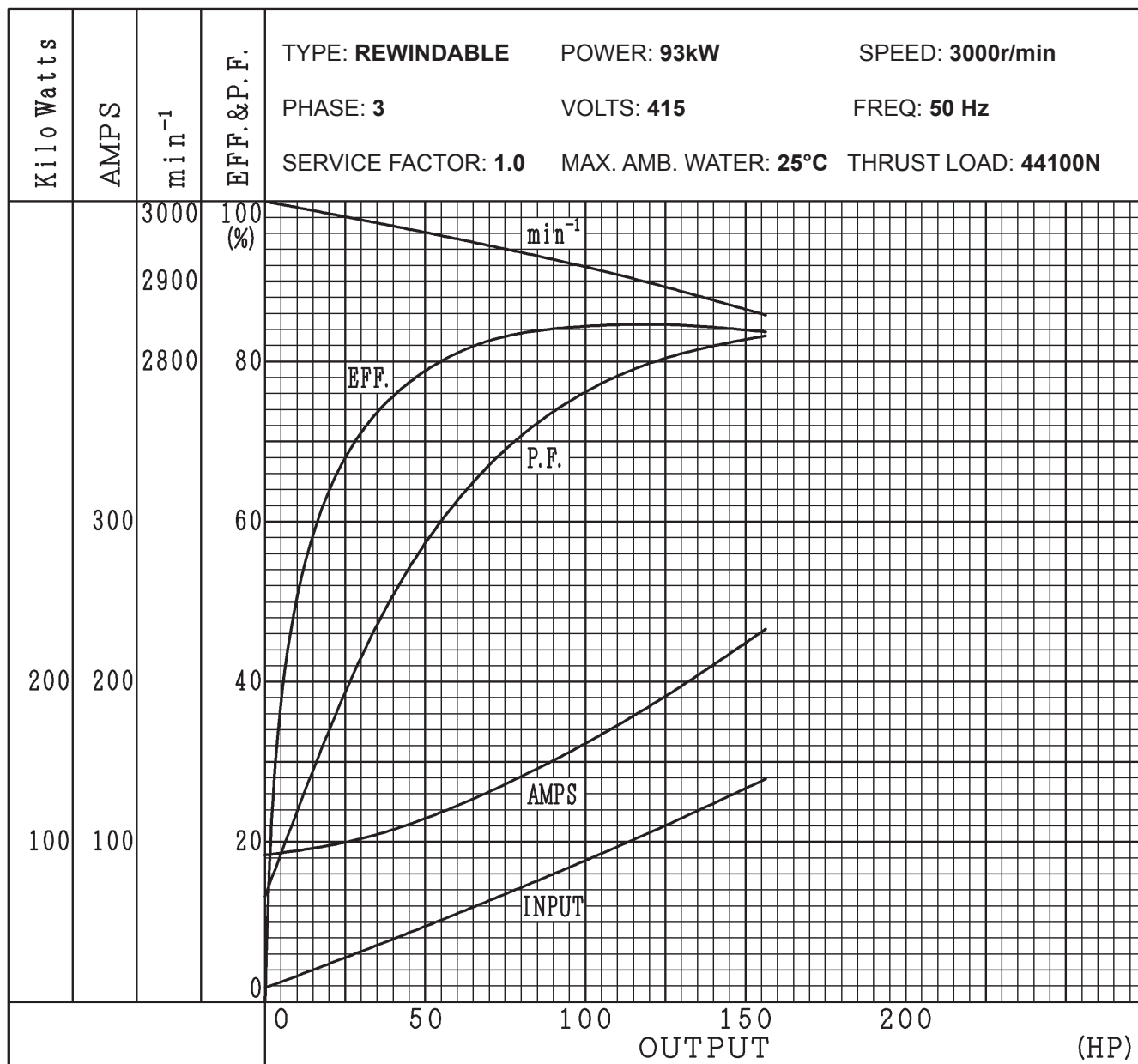
Full load Torque 245 N·m
Break Down Torque 639 N·m
Locked Rotor Torque 404 N·m
Locked Rotor Current 938 Amperes
KVA Code H



"X" Series
8 inch (200mm)
Submersible Electric Motor

MODEL
X-I 0930

PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (31.25) | 50% (62.5) | 75% (93.75) | 100% (125) | 125% (156.25) |
|-------------------|----------------|----------------|---------------|----------------|---------------|------------------|
| AMPS | 91.7 | 102.6 | 124.7 | 154.7 | 190.9 | 232.8 |
| EFF. | 0 | 71.8 | 81.5 | 84.2 | 84.6 | 83.7 |
| P.F. | 13.2 | 44.1 | 63.8 | 74.7 | 80.4 | 83.2 |
| min ⁻¹ | 3000 | 2976 | 2951 | 2924 | 2893 | 2858 |
| WATTS | 8720 | 32470 | 57210 | 83060 | 110220 | 139260 |

| | | |
|----------------------|------|---------|
| Full load Torque | 308 | N·m |
| Break Down Torque | 803 | N·m |
| Locked Rotor Torque | 520 | N·m |
| Locked Rotor Current | 1114 | Amperes |
| KVA Code | H | |

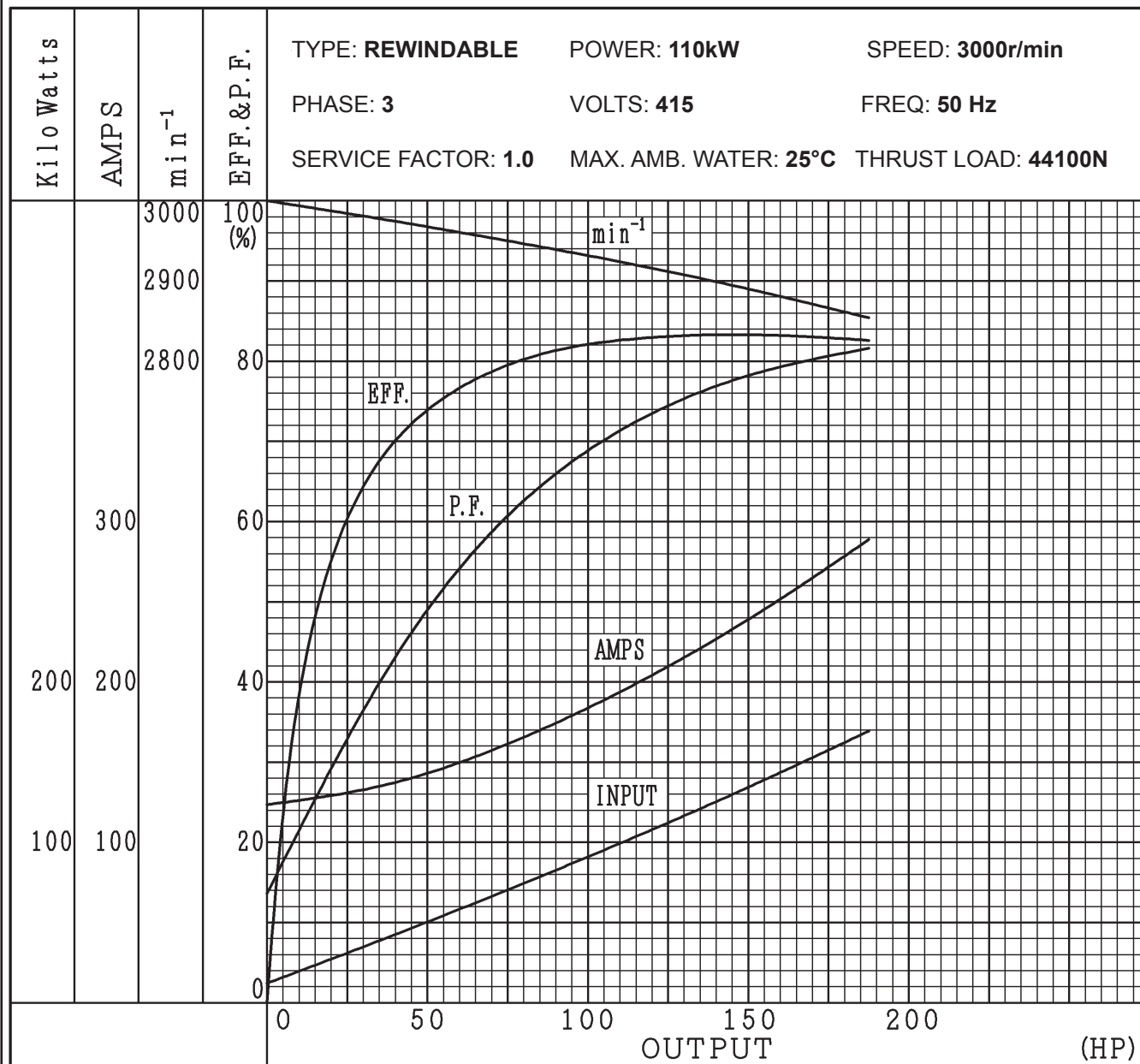
MODEL
X-I 1100

“X” Series

8 inch (200mm)
Submersible Electric Motor



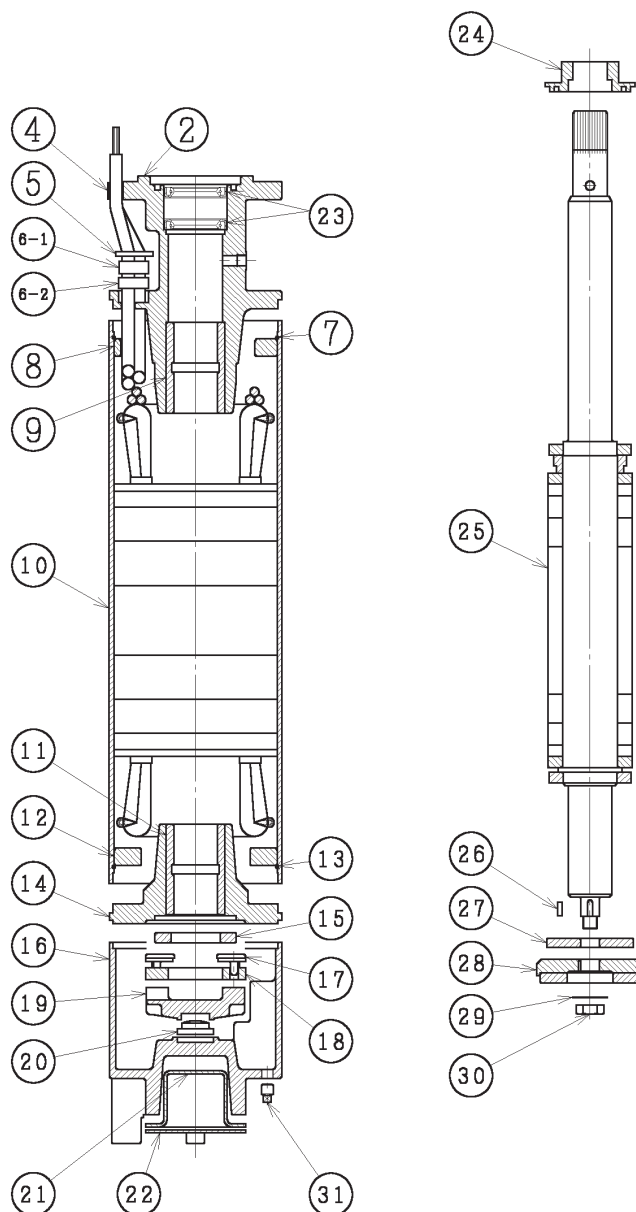
PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (37.5) | 50% (75) | 75% (112.5) | 100% (150) | 125% (187.5) |
|-------------------|-------------|------------|----------|-------------|------------|--------------|
| AMPS | 123.5 | 136.1 | 161.3 | 196.3 | 238.9 | 288.7 |
| EFF. | 0 | 68.9 | 79.5 | 82.7 | 83.3 | 82.6 |
| P.F. | 13.6 | 41.5 | 60.7 | 71.9 | 78.2 | 81.6 |
| min ⁻¹ | 3000 | 2976 | 2950 | 2922 | 2890 | 2854 |
| WATTS | 12100 | 40600 | 70380 | 101480 | 134330 | 169340 |

Full load Torque 370 N·m
Break Down Torque 784 N·m
Locked Rotor Torque 566 N·m
Locked Rotor Current 1354 Amperes
KVA Code H

PARTS AND MATERIALS



| No. | Parts Name | Material | Qty | No. | Parts Name | Material | Qty |
|-----|----------------------|-----------------------|-----|-----|---------------------------|---------------|-------|
| 2 | Upper end bracket | CI | 1 | 18 | Metal support | CI | 1 |
| 4 | Lead wire cover | SS | 1 | 19 | Metal frame | CI | 1 |
| 5 | Packing plate | Brass | 1 | 20 | Thrust plate | SS | 1 |
| 6-1 | Packing seat | Nylon | 1 | 21 | Bellows | Rubber | 1 |
| 6-2 | Rubber packing | Rubber | 1 | 22 | Bellows cover | Carbon Steel | 1 |
| 7 | Support ring | Spring Steel | 1 | 23 | Rubber seal | Rubber | 2 |
| 8 | Support plate | CI | 1 | 24 | Slinger | CI | 1 |
| 9 | Upper sleeve bearing | Carbon | 1 | 25 | Rotor assembly | (Shaft 420SS) | 1 |
| 10 | Stator Assembly | Carbon Steel Exterior | 1 | 26 | Bearing key | Key Steel | 1 |
| 11 | Lower sleeve bearing | Carbon | 1 | 27 | Slide plate | Carbon Steel | 1 |
| 12 | Support plate | CI | 1 | 28 | Thrust bearing | Carbon | 1 |
| 13 | Support ring | Spring Steel | 1 | 29 | Lock washer | SS | 1 |
| 14 | Lower end bracket | CI | 1 | 30 | Lock Nut | Bronze | 1 |
| 15 | Upper bearing | Carbon | 1 | 31 | Drain plug | 304SS | 1 |
| 16 | End cover | CI | 1 | 32 | Splice kit with lead wire | | 1 set |
| 17 | Pivot shoe | SS | 6 | 50 | Bolts. screws | SS | 1 set |

MODEL
8 Inch

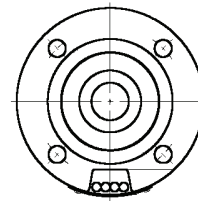
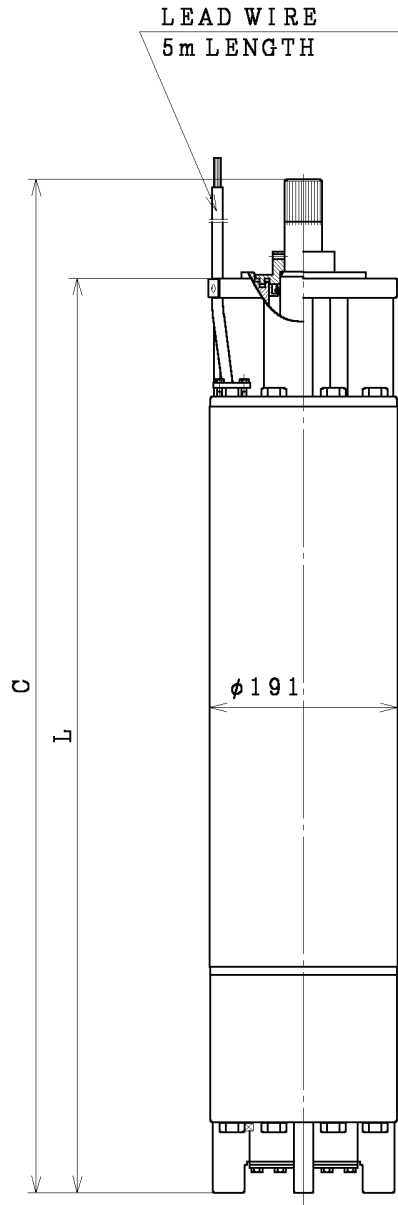
“X” Series

8 inch (200mm)

Submersible Electric Motor



MOTOR DIMENSIONS



8 Inch NEMA Standard
pump mounting face
and splined shaft

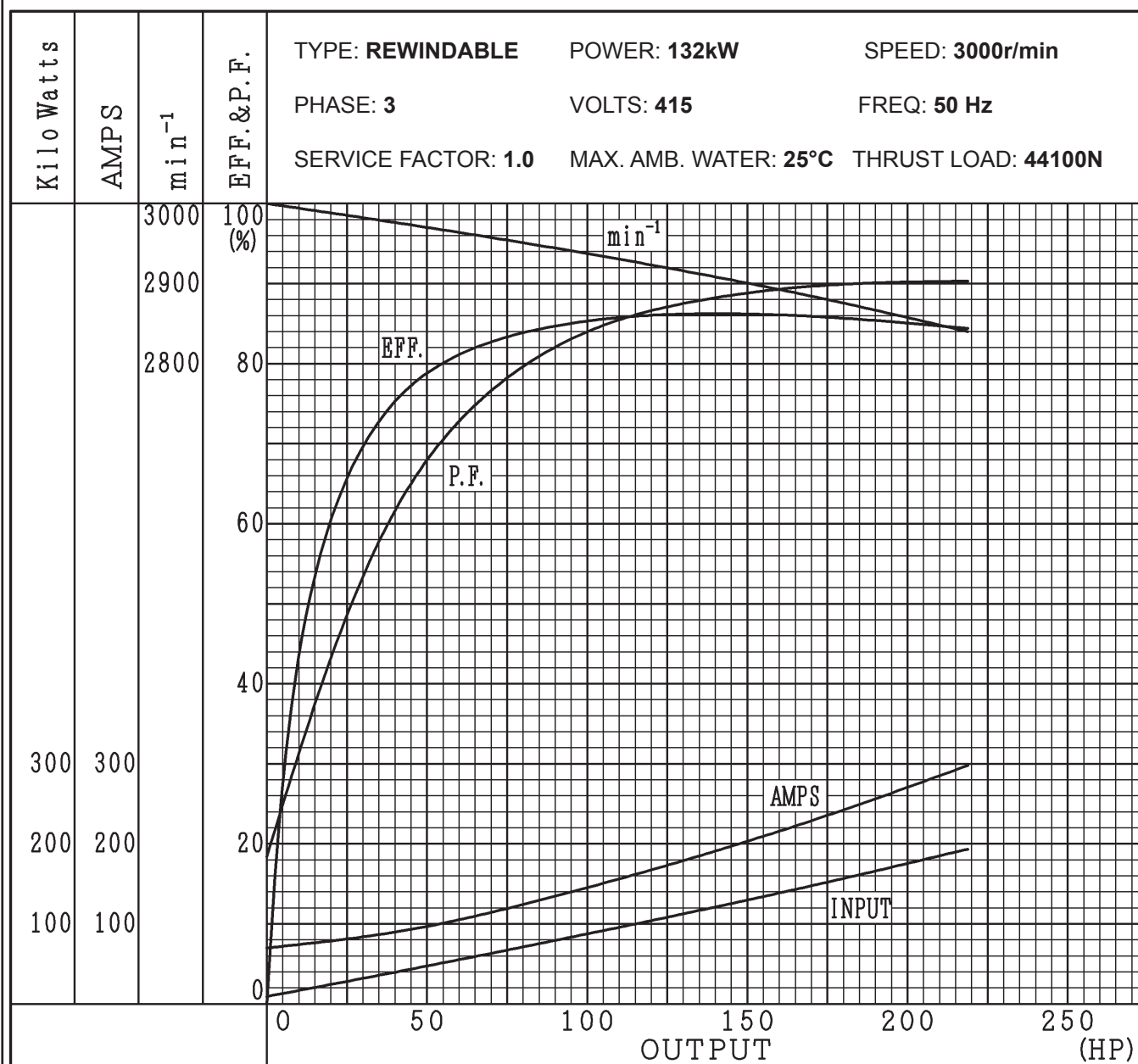
| Output | | Phase | Volts | C (mm) | L (mm) | Weight (kg) | Thrust Cap (N) | | Lead Wire Size | |
|--------|-----|-------|-------|--------|--------|-------------|----------------|------|-----------------|-----|
| kW | HP | | | | | | Down | Up | mm ² | AWG |
| 30 | 40 | 3 | 415 | 1281 | 1180 | 160 | 44100 | 4410 | 8 | #8 |
| 37 | 50 | 3 | 415 | 1351 | 1250 | 185 | 44100 | 4410 | 8 | #8 |
| 45 | 60 | 3 | 415 | 1451 | 1350 | 210 | 44100 | 4410 | 8 | #8 |
| 55 | 75 | 3 | 415 | 1581 | 1480 | 235 | 44100 | 4410 | 14 | #6 |
| 75 | 100 | 3 | 415 | 1781 | 1680 | 270 | 44100 | 4410 | 14 | #6 |
| 90 | 125 | 3 | 415 | 1781 | 1680 | 270 | 44100 | 4410 | 14 | #6 |
| 110 | 150 | 3 | 415 | 1881 | 1780 | 300 | 44100 | 4410 | 22 | #4 |



"X" Series
10 inch (250mm)
Submersible Electric Motor

MODEL
X-I 1320

PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (43.75) | 50% (87.5) | 75% (131.25) | 100% (175) | 125% (218.75) |
|-------------------|-------------|-------------|------------|--------------|------------|---------------|
| AMPS | 70.0 | 92.2 | 131.9 | 180.5 | 235.6 | 297.8 |
| EFF. | 0 | 76.8 | 84.5 | 86.2 | 85.8 | 84.4 |
| P.F. | 18.4 | 64.2 | 81.5 | 87.6 | 89.8 | 90.3 |
| min ⁻¹ | 3000 | 2974 | 2946 | 2915 | 2880 | 2840 |
| WATTS | 9240 | 42500 | 77250 | 113590 | 152160 | 193350 |

Full load Torque 433 N·m
Break Down Torque 1039 N·m
Locked Rotor Torque 665 N·m
Locked Rotor Current 1380 Amperes
KVA Code G

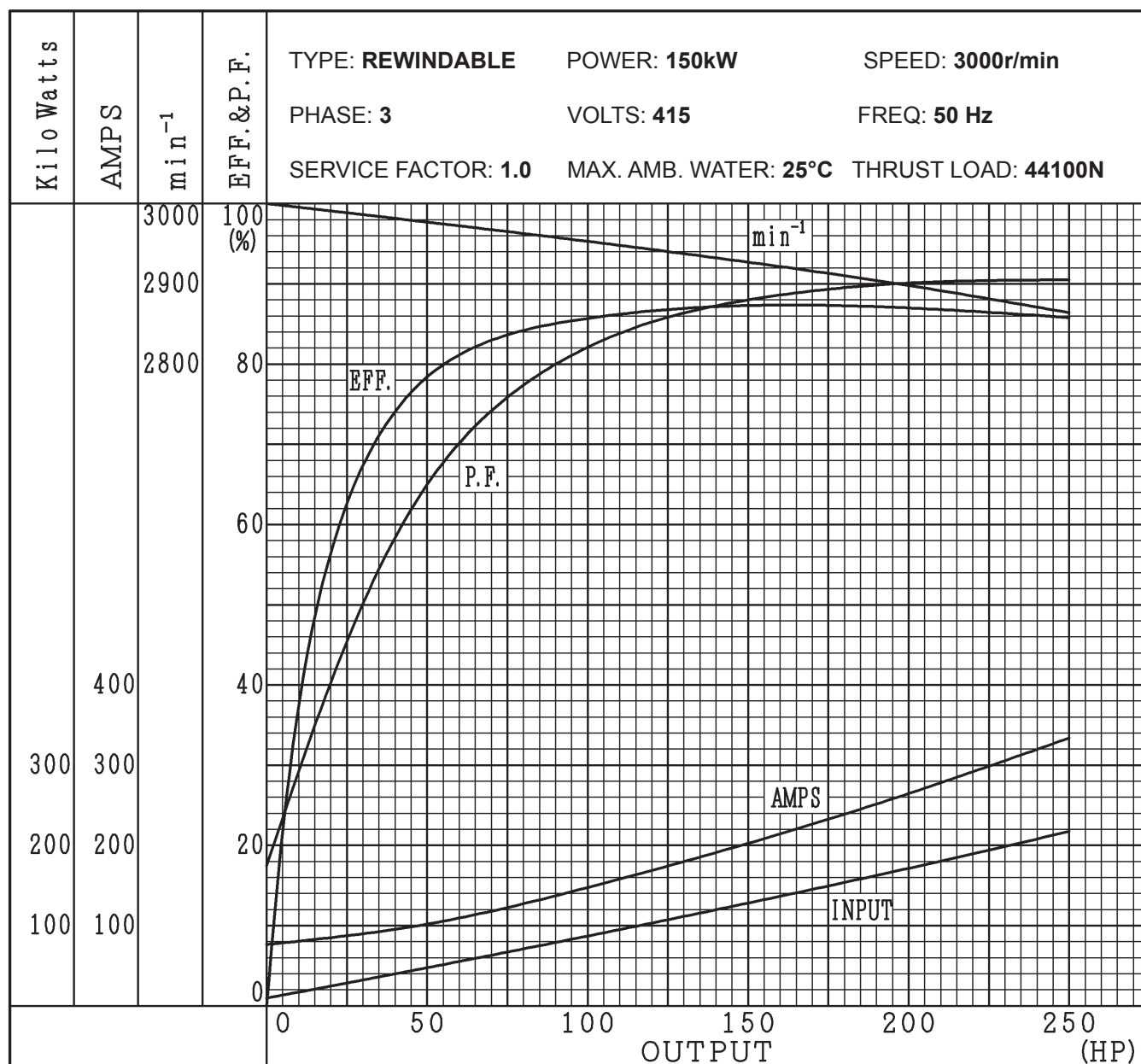
MODEL
X-I 1500

“X” Series

10 inch (250mm)
Submersible Electric Motor



PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (50) | 50% (100) | 75% (150) | 100% (200) | 125% (250) |
|-------------------|----------------|-------------|--------------|--------------|---------------|---------------|
| AMPS | 76.5 | 101.9 | 147.5 | 202.6 | 264.7 | 333.9 |
| EFF. | 0 | 78.4 | 85.7 | 87.3 | 87.0 | 85.8 |
| P. F. | 17.5 | 65.0 | 82.1 | 88.0 | 90.1 | 90.5 |
| min ⁻¹ | 3000 | 2977 | 2953 | 2927 | 2898 | 2864 |
| WATTS | 9600 | 47580 | 87050 | 128180 | 171490 | 217370 |

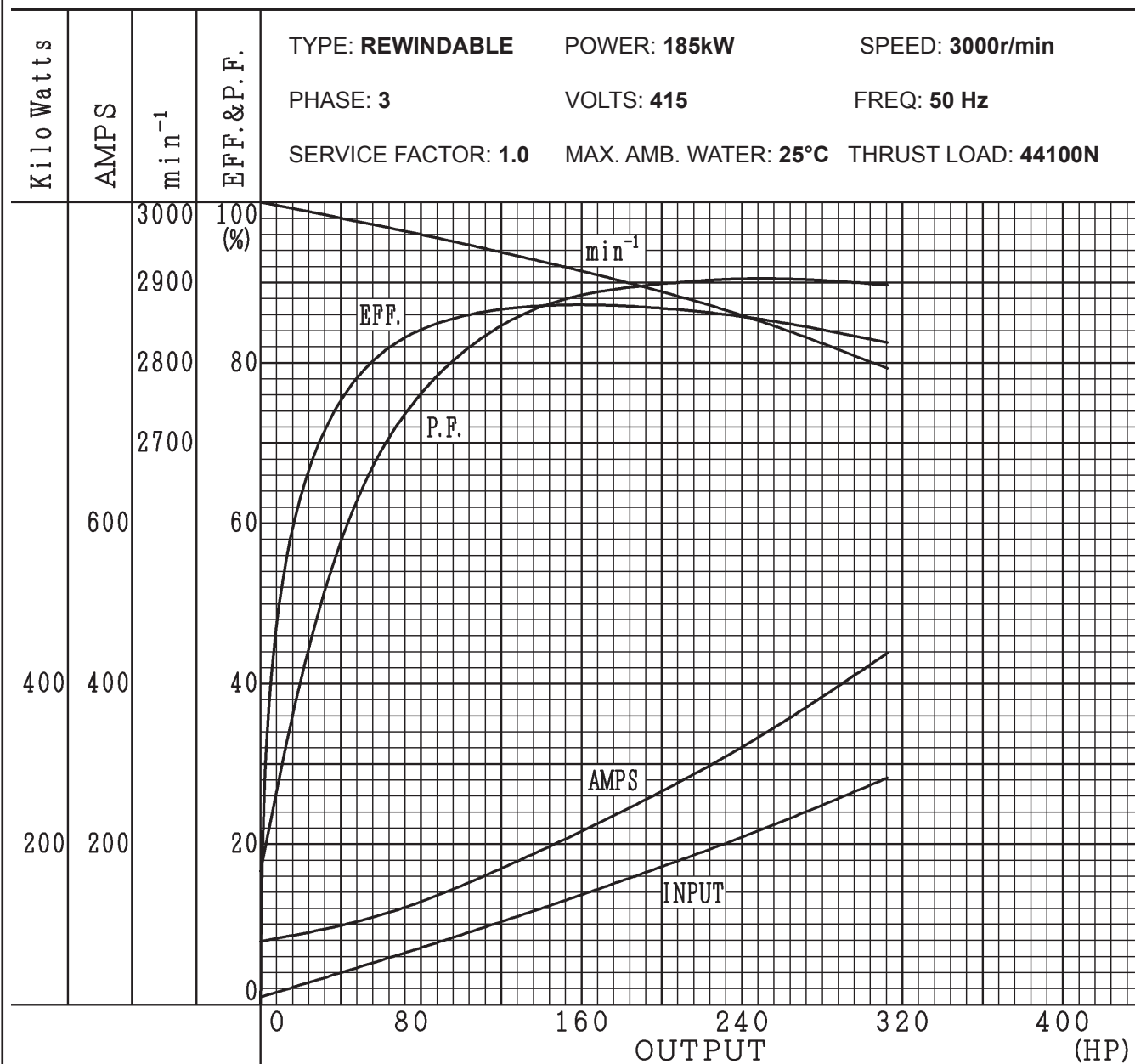
Full load Torque 492 N·m
Break Down Torque 1173 N·m
Locked Rotor Torque 790 N·m
Locked Rotor Current 1610 Amperes
KVA Code G



"X" Series
10 inch (250mm)
Submersible Electric Motor

MODEL
X-I 1850

PERFORMANCE DATA



| LOAD (HP) | No load (-) | 25% (62.5) | 50% (125) | 75% (187.5) | 100% (250) | 125% (312.5) |
|-------------------|----------------|---------------|--------------|----------------|---------------|-----------------|
| AMPS | 78.9 | 113.6 | 175.3 | 249.8 | 335.9 | 438.2 |
| EFF. | 0 | 81.6 | 86.8 | 87.0 | 85.4 | 82.5 |
| P.F. | 16.6 | 70.0 | 85.3 | 89.5 | 90.5 | 89.7 |
| min ⁻¹ | 3000 | 2969 | 2935 | 2897 | 2851 | 2793 |
| WATTS | 9400 | 57140 | 107430 | 160780 | 218380 | 282580 |

Full load Torque 625 N·m
Break Down Torque 1169 N·m
Locked Rotor Torque 788 N·m
Locked Rotor Current 1610 Amperes
KVA Code E

MODEL
10 Inch

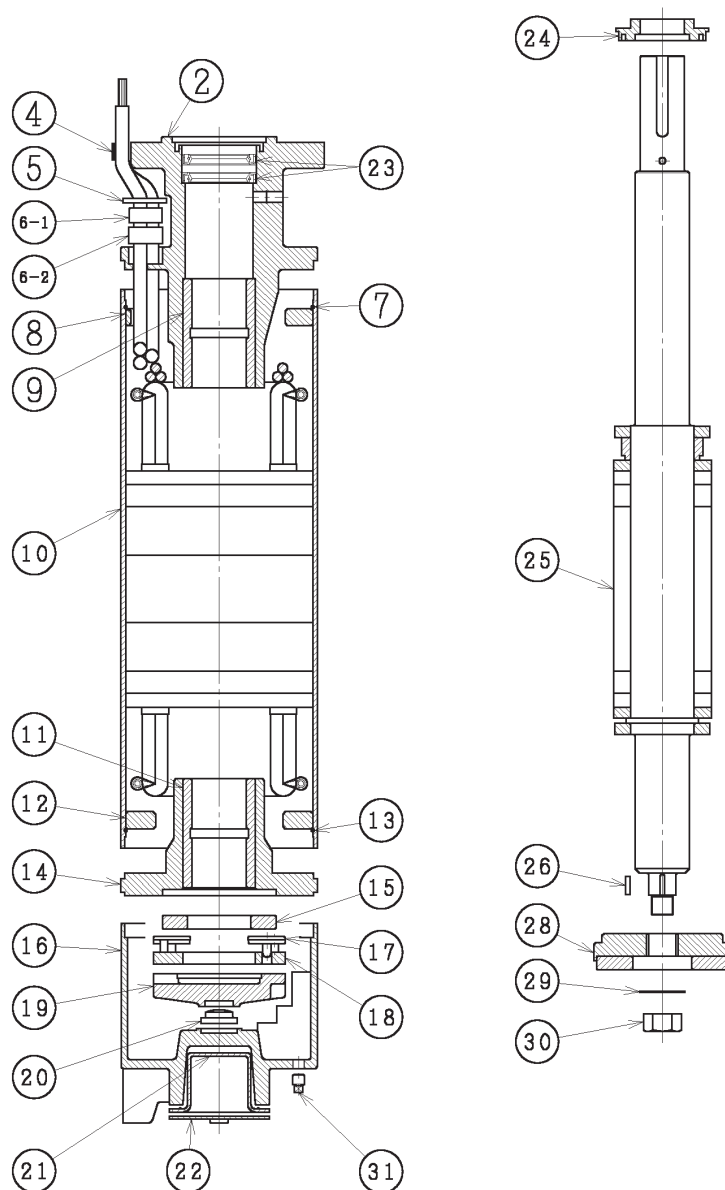
“X” Series

10 inch (250mm)

Submersible Electric Motor

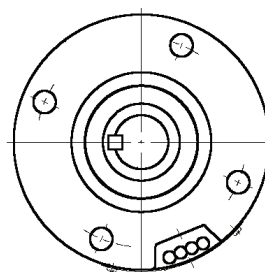
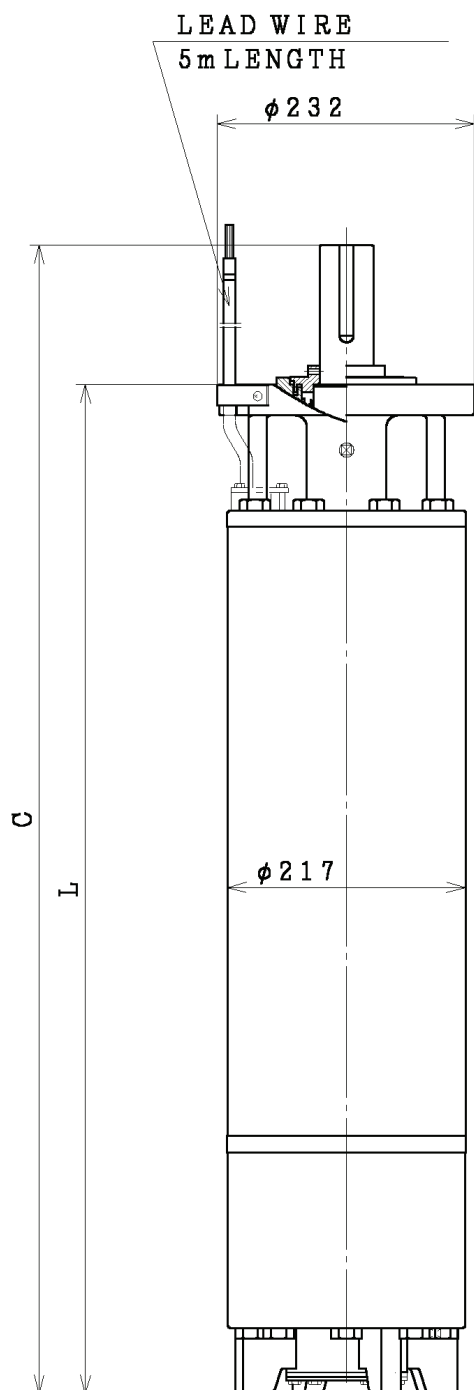


PARTS AND MATERIALS



| No. | Parts Name | Material | Qty | No. | Parts Name | Material | Qty |
|-----|----------------------|-----------------------|-----|-----|---------------------------|---------------|-------|
| 2 | Upper end bracket | CI | 1 | 18 | Metal support | CI | 1 |
| 4 | Lead wire cover | SS | 1 | 19 | Metal frame | CI | 1 |
| 5 | Packing plate | Brass | 1 | 20 | Thrust plate | SS | 1 |
| 6-1 | Packing seat | Nylon | 1 | 21 | Bellows | Rubber | 1 |
| 6-2 | Rubber packing | Rubber | 1 | 22 | Bellows cover | Carbon Steel | 1 |
| 7 | Support ring | Spring Steel | 1 | 23 | Rubber seal | Rubber | 2 |
| 8 | Support plate | CI | 1 | 24 | Slinger | CI | 1 |
| 9 | Upper sleeve bearing | Carbon | 1 | 25 | Rotor assembly | (Shaft 420SS) | 1 |
| 10 | Stator Assembly | Carbon Steel Exterior | 1 | 26 | Bearing key | Key Steel | 1 |
| 11 | Lower sleeve bearing | Carbon | 1 | 27 | Slide plate | Carbon Steel | 1 |
| 12 | Support plate | CI | 1 | 28 | Thrust bearing | Carbon | 1 |
| 13 | Support ring | Spring Steel | 1 | 29 | Lock washer | SS | 1 |
| 14 | Lower end bracket | CI | 1 | 30 | Lock Nut | Bronze | 1 |
| 15 | Upper bearing | Carbon | 1 | 31 | Drain plug | 304SS | 1 |
| 16 | End cover | CI | 1 | 32 | Splice kit with lead wire | | 1 set |
| 17 | Pivot shoe | SS | 8 | 50 | Bolts, screws | SS | 1 set |

MOTOR DIMENSIONS



10 Inch NEMA Standard
pump mounting face
and keyed shaft

| Output | | Phase | Volts | C (mm) | L (mm) | Weight (kg) | Thrust Cap (N) | | Lead Wire Size | |
|--------|-----|-------|-------|--------|--------|-------------|----------------|------|-----------------|-----|
| kW | HP | | | | | | Down | Up | mm ² | AWG |
| 132 | 175 | 3 | 415 | 1897 | 1770 | 370 | 44100 | 4410 | 30 | #2 |
| 150 | 200 | 3 | 415 | 2147 | 2020 | 430 | 44100 | 4410 | 30 | #2 |
| 185 | 250 | 3 | 415 | 2147 | 2020 | 430 | 44100 | 4410 | 30 | #2 |

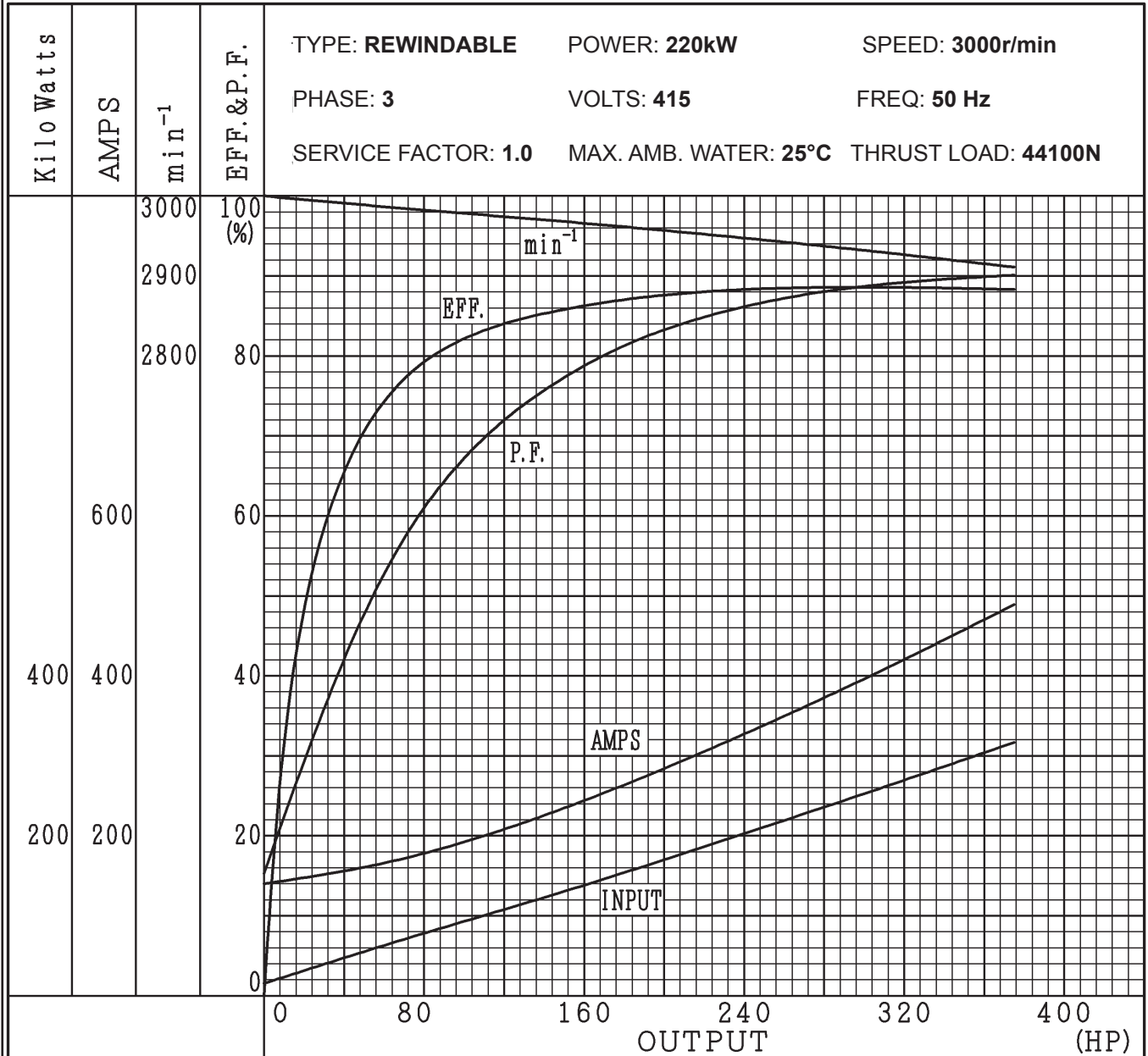
MODEL
X-I 2200

“X” Series

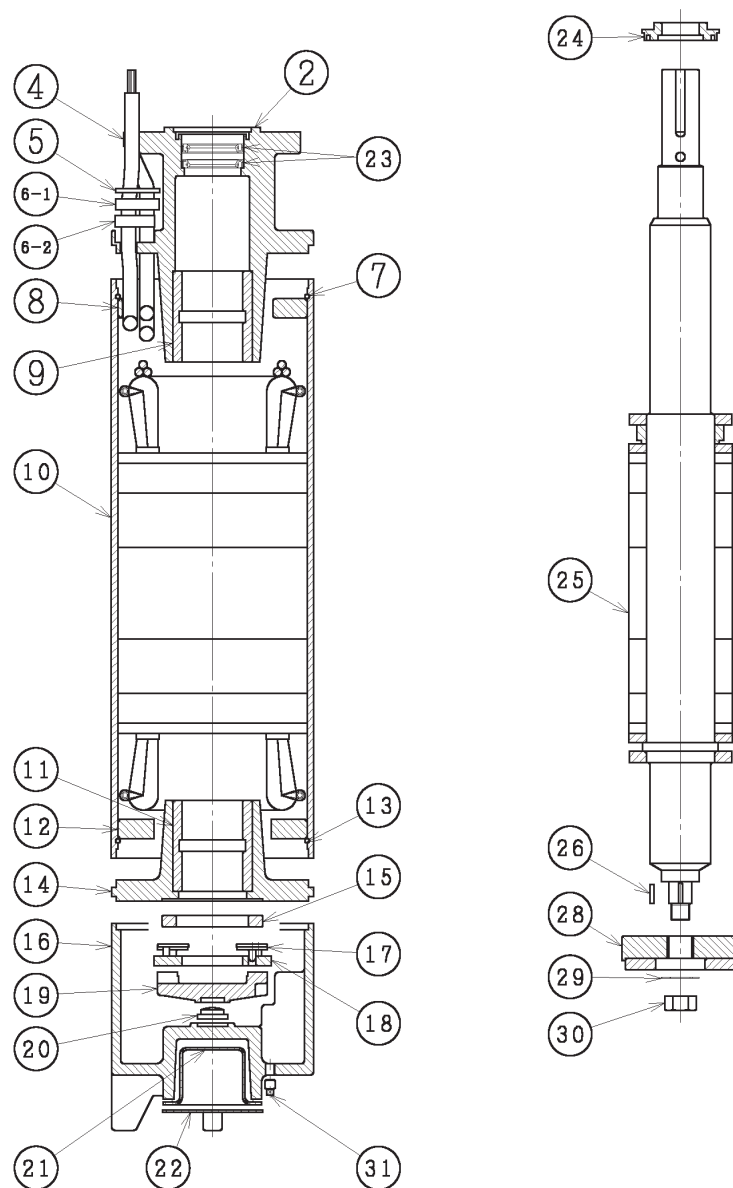
12 inch (300mm)
Submersible Electric Motor



PERFORMANCE DATA



PARTS AND MATERIALS



| No. | Parts Name | Material | Qty | No. | Parts Name | Material | Qty |
|-----|----------------------|-----------------------|-----|-----|---------------------------|---------------|-------|
| 2 | Upper end bracket | CI | 1 | 18 | Metal support | CI | 1 |
| 4 | Lead wire cover | SS | 1 | 19 | Metal frame | CI | 1 |
| 5 | Packing plate | Brass | 1 | 20 | Thrust plate | SS | 1 |
| 6-1 | Packing seat | Nylon | 1 | 21 | Bellows | Rubber | 1 |
| 6-2 | Rubber packing | Rubber | 1 | 22 | Bellows cover | Carbon Steel | 1 |
| 7 | Support ring | Spring Steel | 1 | 23 | Rubber seal | Rubber | 2 |
| 8 | Support plate | CI | 1 | 24 | Slinger | CI | 1 |
| 9 | Upper sleeve bearing | Carbon | 1 | 25 | Rotor assembly | (Shaft 420SS) | 1 |
| 10 | Stator Assembly | Carbon Steel Exterior | 1 | 26 | Bearing key | Key Steel | 1 |
| 11 | Lower sleeve bearing | Carbon | 1 | 27 | Slide plate | Carbon Steel | 1 |
| 12 | Support plate | CI | 1 | 28 | Thrust bearing | Carbon | 1 |
| 13 | Support ring | Spring Steel | 1 | 29 | Lock washer | SS | 1 |
| 14 | Lower end bracket | CI | 1 | 30 | Lock Nut | Bronze | 1 |
| 15 | Upper bearing | Carbon | 1 | 31 | Drain plug | 304SS | 1 |
| 16 | End cover | CI | 1 | 32 | Splice kit with lead wire | | 1 set |
| 17 | Pivot shoe | SS | 8 | 50 | Bolts. screws | SS | 1 set |

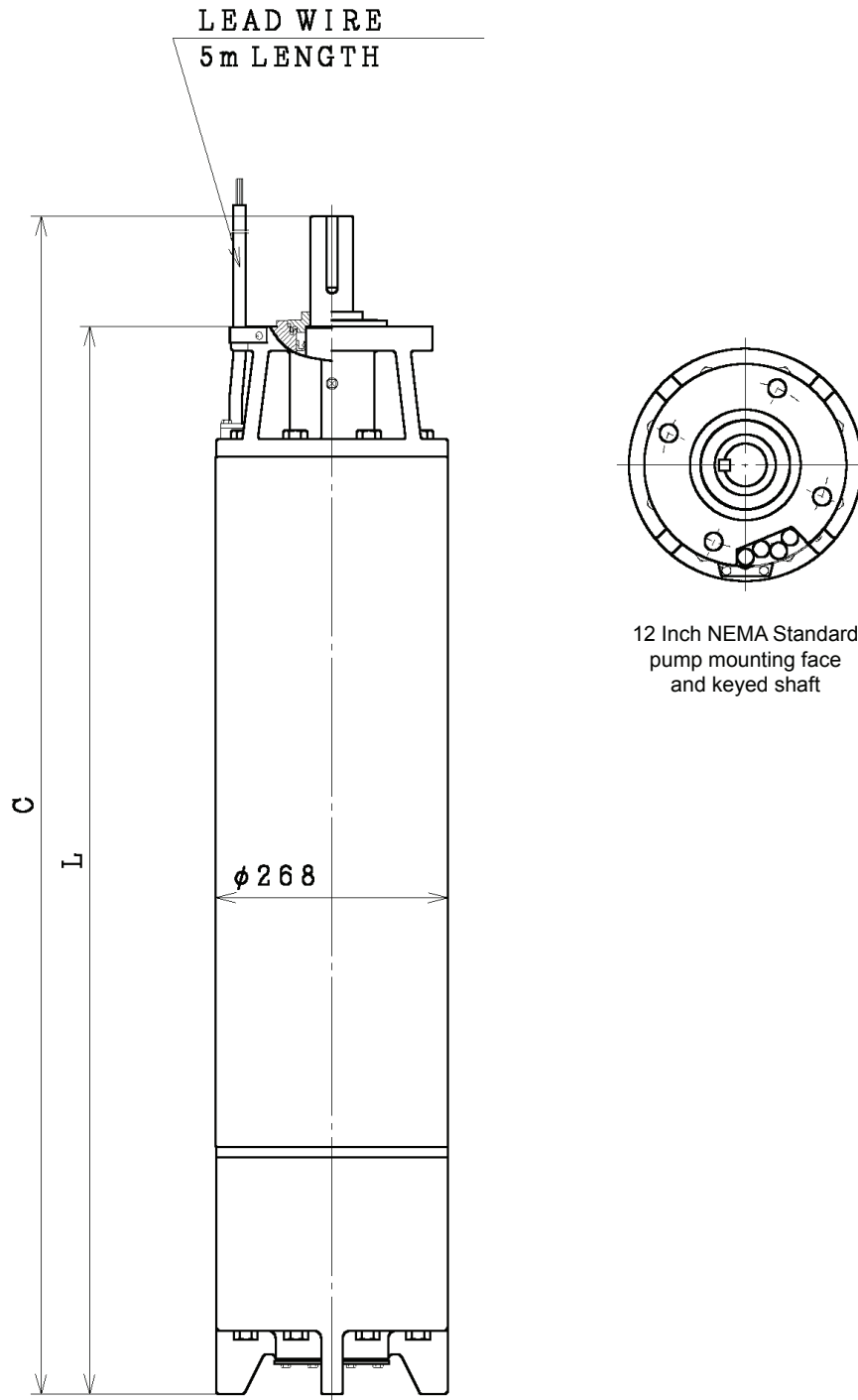
MODEL
12 Inch

“X” Series

12 inch (300mm)
Submersible Electric Motor



MOTOR DIMENSIONS



| Output | | Phase | Volts | C (mm) | L (mm) | Weight (kg) | Thrust Cap (N) | | Lead Wire Size | |
|--------|-----|-------|-------|--------|--------|-------------|----------------|------|-----------------|------|
| kW | HP | | | | | | Down | Up | mm ² | AWG |
| 225 | 300 | 3 | 415 | 2127 | 2000 | 660 | 44100 | 4410 | 60 | #2/0 |



“X” Series
6, 8, 10 & 12 inch
Submersible Electric Motor

MODEL
X-I

MOTOR COOLING

SERVICE FACTOR

6 Inch Encapsulated Motors

| Water Velocity (m/s) | Ambient Temperature | | |
|-------------------------|---------------------|------|------|
| | 35°C | 45°C | 55°C |
| 0.09 | 0.96 | 0.67 | 0.39 |
| 0.15 | 1.00 | 0.70 | 0.40 |
| 0.225 | 1.04 | 0.73 | 0.42 |
| 0.3 | 1.08 | 0.76 | 0.45 |
| 0.45 | 1.12 | 0.79 | 0.47 |
| 0.6 | 1.16 | 0.82 | 0.49 |
| 0.9 | 1.20 | 0.85 | 0.51 |
| 1.2 | 1.24 | 0.88 | 0.53 |
| 1.5 | 1.28 | 0.90 | 0.55 |
| 1.8 | 1.30 | 0.92 | 0.56 |
| 2.1 | 1.30 | 0.94 | 0.57 |
| 2.4 | 1.30 | 0.95 | 0.58 |
| 2.7 | 1.30 | 0.96 | 0.59 |
| 3 | 1.30 | 0.97 | 0.60 |

8, 10 and 12 Inch Rewindable Motors

| Water Velocity (m/s) | Ambient Temperature | | | |
|-------------------------|---------------------|------|------|------|
| | 25°C | 35°C | 45°C | 55°C |
| 0.09 | 0.95 | 0.72 | 0.48 | 0.30 |
| 0.15 | 1.00 | 0.76 | 0.51 | 0.32 |
| 0.225 | 1.05 | 0.79 | 0.54 | 0.34 |
| 0.3 | 1.10 | 0.82 | 0.57 | 0.36 |
| 0.45 | 1.14 | 0.85 | 0.60 | 0.38 |
| 0.6 | 1.18 | 0.88 | 0.62 | 0.39 |
| 0.9 | 1.22 | 0.91 | 0.64 | 0.40 |
| 1.2 | 1.25 | 0.94 | 0.66 | 0.41 |
| 1.5 | 1.28 | 0.96 | 0.68 | 0.42 |
| 1.8 | 1.30 | 0.98 | 0.70 | 0.43 |
| 2.1 | 1.30 | 1.00 | 0.71 | 0.44 |
| 2.4 | 1.30 | 1.02 | 0.72 | 0.44 |
| 2.7 | 1.30 | 1.03 | 0.73 | 0.45 |
| 3 | 1.30 | 1.03 | 0.74 | 0.45 |

MODEL
X-I

"X" Series

6, 8, 10 & 12 inch
Submersible Electric Motor



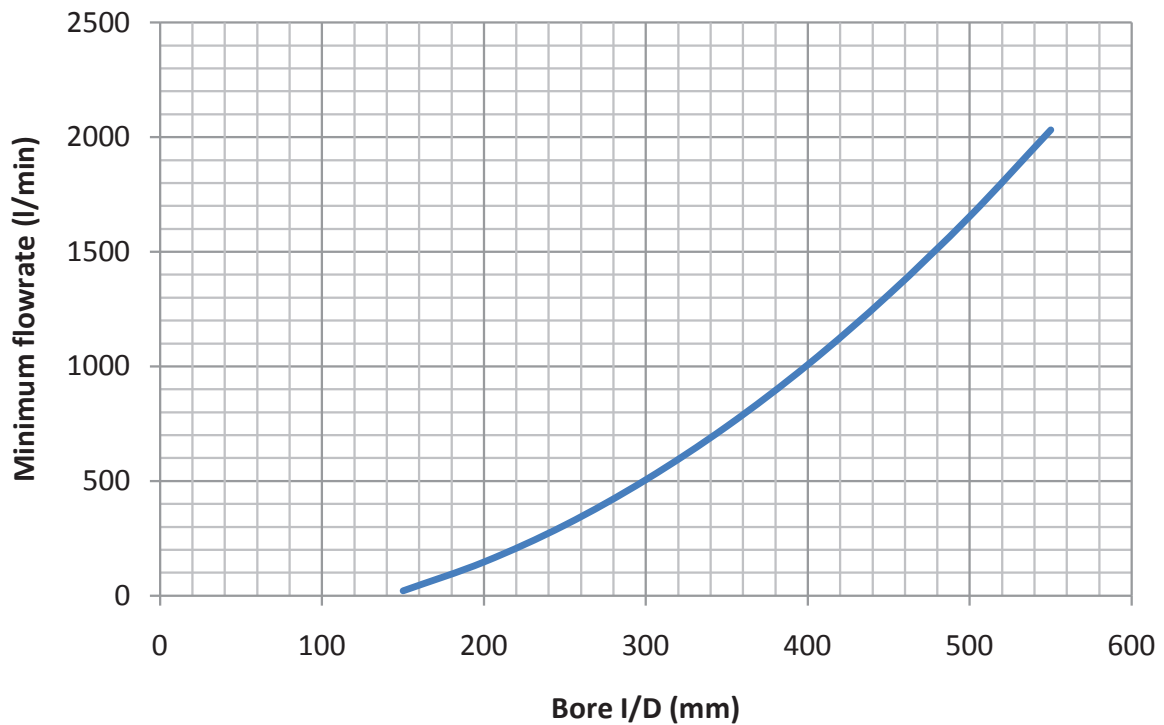
MOTOR COOLING

MINIMUM FLOW RATES REQUIRED FOR MOTOR COOLING

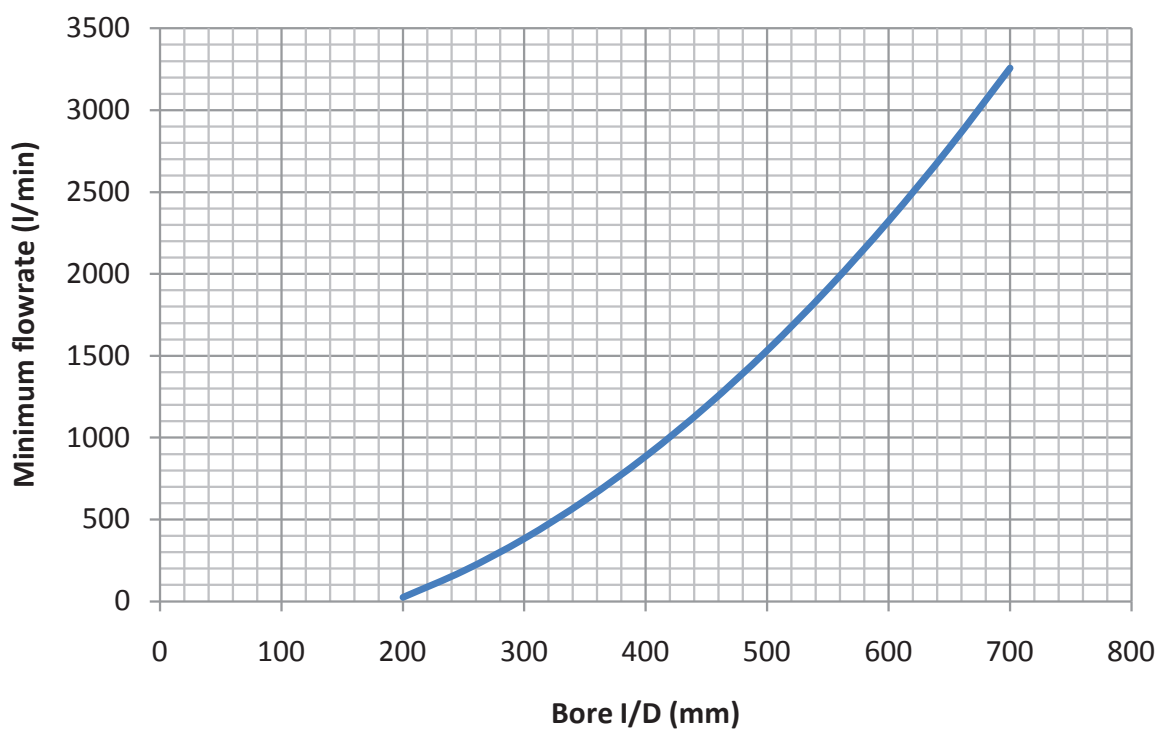
Water up to 35°C for motors up to 30kW.

Water up to 25°C for motors from 37kW.

6 Inch Motors



8 Inch Motors

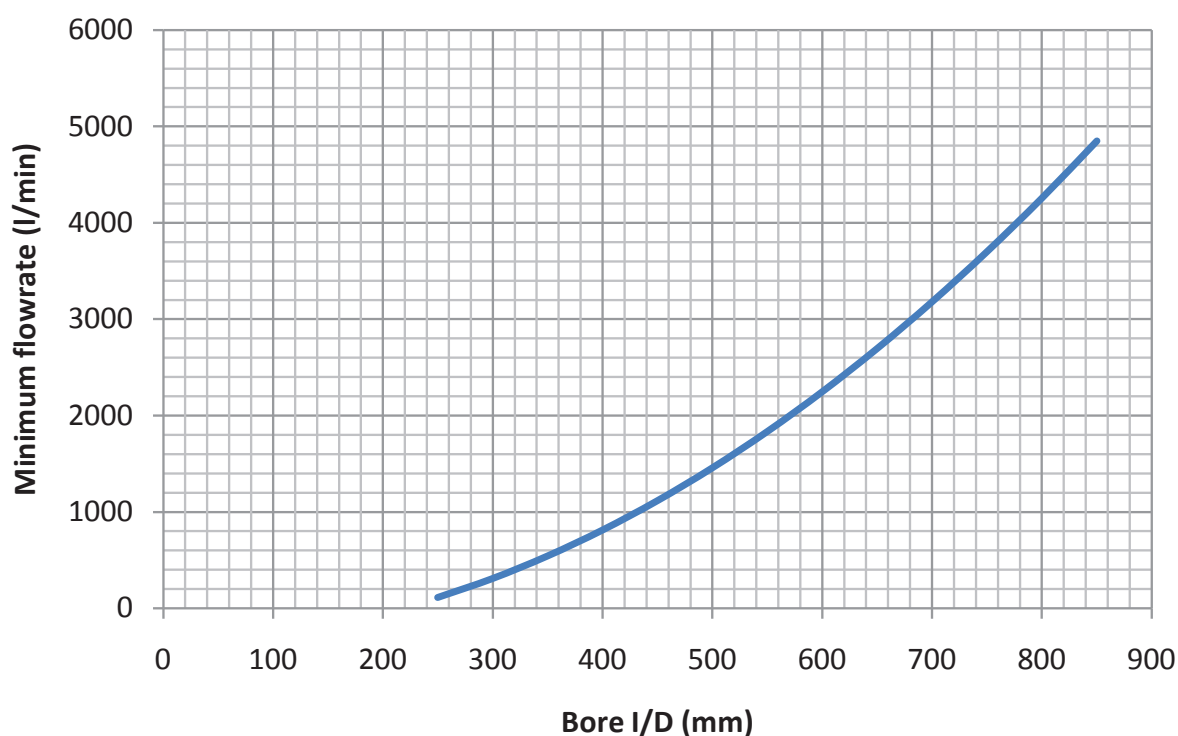


MOTOR COOLING

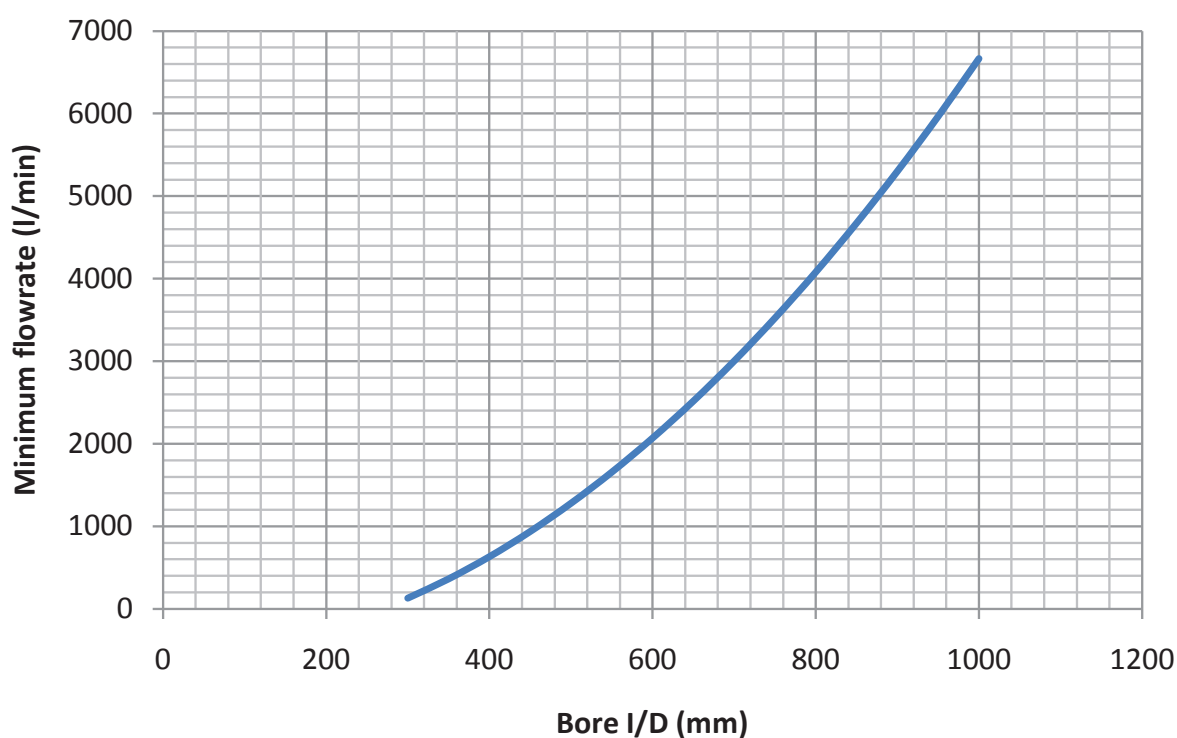
MINIMUM FLOW RATES REQUIRED FOR MOTOR COOLING

Water up to 25°C.

10 Inch Motors



12 Inch Motors



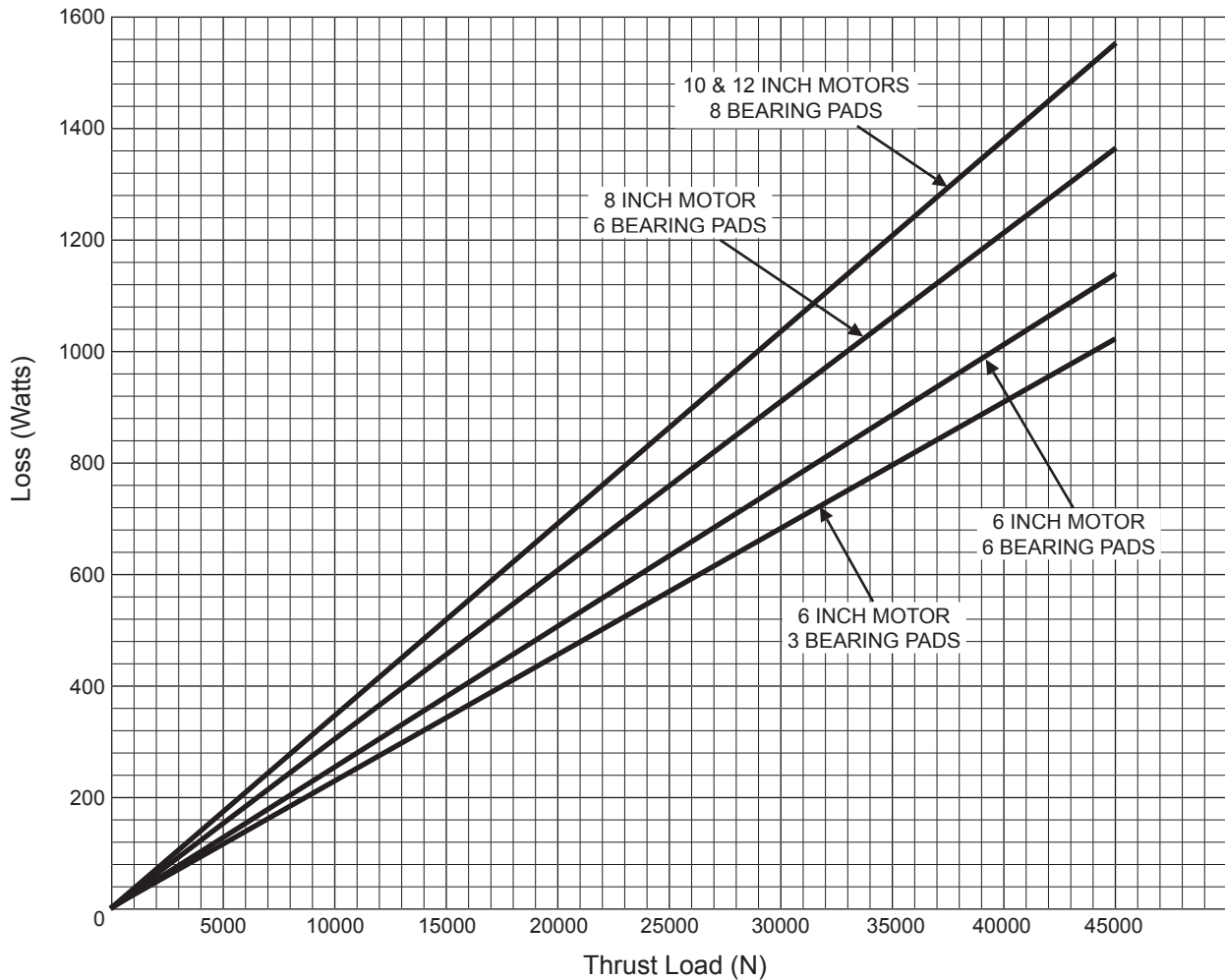
MODEL
X-I

"X" Series

6, 8, 10 & 12 inch
Submersible Electric Motor



THRUST LOSSES



CABLE SELECTION

CABLE SELECTION FOR 3 PHASE SUBMERSIBLE MOTORS

Maximum cable length in metres (motor to supply point) for 415V nominal mains power supply

Cable spec. - 3 core + earth. PVC or rubber insulated and sheathed, copper conductors

| Motor kW | FLA | Cable Size (mm²) | | | | | | | | | | | | | | | | | | |
|----------------|-------|------------------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|-------|------|------|------|-------|------|
| | | 1.5 | 2.5 | 4 | 6 | 10 | 16 | 25 | 35 | 50 | 70 | 95 | 120 | 150 | 185 | 240 | 300 | 400 | 500 | 630 |
| 6 Inch Motors | | | | | | | | | | | | | | | | | | | | |
| 3.7 kW | 7.7 | 94 | 172 | 277 | 415 | 698 | 1108 | 1738 | 2406 | 3231 | 4575 | 6138 | 7506 | 8835 | 10324 | | | | | |
| 5.5 kW | 11.9 | 60 | 111 | 179 | 268 | 451 | 717 | 1124 | 1556 | 2090 | 2960 | 3971 | 4857 | 5717 | 6680 | 7890 | 8806 | 9633 | 10379 | |
| 7.5 kW | 15.4 | 47 | 86 | 138 | 207 | 349 | 554 | 869 | 1203 | 1615 | 2287 | 3069 | 3753 | 4417 | 5162 | 6096 | 6805 | 7444 | 8020 | 8582 |
| 11 kW | 22.1 | 32 | 60 | 96 | 144 | 243 | 386 | 605 | 838 | 1125 | 1594 | 2138 | 2615 | 3078 | 3597 | 4248 | 4741 | 5187 | 5588 | 5980 |
| 15 kW | 28.9 | | 46 | 73 | 110 | 186 | 295 | 463 | 641 | 860 | 1219 | 1635 | 1999 | 2354 | 2750 | 3248 | 3626 | 3966 | 4273 | 4573 |
| 18.5 kW | 36.6 | | | 58 | 87 | 146 | 233 | 365 | 506 | 679 | 962 | 1291 | 1579 | 1858 | 2172 | 2565 | 2863 | 3132 | 3374 | 3611 |
| 22 kW | 44.9 | | | | 71 | 119 | 190 | 298 | 412 | 554 | 784 | 1052 | 1287 | 1515 | 1770 | 2091 | 2334 | 2553 | 2750 | 2943 |
| 30 kW | 58.5 | | | | | 91 | 145 | 228 | 316 | 425 | 602 | 807 | 988 | 1162 | 1359 | 1604 | 1791 | 1959 | 2111 | 2259 |
| 37 kW | 77.9 | | | | | | 109 | 171 | 237 | 319 | 452 | 606 | 741 | 873 | 1020 | 1205 | 1345 | 1471 | 1585 | 1696 |
| 8 Inch Motors | | | | | | | | | | | | | | | | | | | | |
| 37 kW | 69.9 | | | | | | 122 | 191 | 265 | 355 | 503 | 676 | 826 | 973 | 1137 | 1343 | 1499 | 1640 | 1766 | 1890 |
| 45 kW | 80.3 | | | | | | 106 | 166 | 230 | 309 | 438 | 588 | 719 | 847 | 990 | 1169 | 1305 | 1427 | 1538 | 1645 |
| 55 kW | 105.7 | | | | | | | 126 | 175 | 235 | 333 | 447 | 546 | 643 | 752 | 888 | 991 | 1084 | 1168 | 1250 |
| 75 kW | 137.8 | | | | | | | | 134 | 180 | 255 | 343 | 419 | 493 | 576 | 681 | 760 | 831 | 896 | 959 |
| 93 kW | 190.9 | | | | | | | | | | 184 | 247 | 302 | 356 | 416 | 491 | 548 | 600 | 646 | 692 |
| 112 kW | 238.9 | | | | | | | | | | | 197 | 241 | 284 | 332 | 393 | 438 | 479 | 517 | 553 |
| 10 Inch Motors | | | | | | | | | | | | | | | | | | | | |
| 130 kW | 235.6 | | | | | | | | | | | 200 | 245 | 288 | 337 | 398 | 444 | 486 | 524 | 560 |
| 150 kW | 264.7 | | | | | | | | | | | | 218 | 257 | 300 | 354 | 395 | 433 | 466 | 499 |
| 185 kW | 335.9 | | | | | | | | | | | | | | 236 | 279 | 311 | 341 | 367 | 393 |
| 12 Inch Motors | | | | | | | | | | | | | | | | | | | | |
| 220 kW | 396.2 | | | | | | | | | | | | | | | 236 | 264 | 289 | 311 | 333 |