



ROYCECROSSGROUP



ROYCE CROSS GROUP

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

| | | | |
|--------------------------------|----------|-------------|--------------|
| NAMEPLATE DATA | | | |
| Y3-100L-2 FRAME | IEC TYPE | 3 kW | 2881 r/min |
| 2 POLE | 3 PHASE | 415 VOLTS | 50 Hz |
| ROYCE CROSS GROUP MANUFACTURER | 5.3 AMPS | IP55 IP | |
| | S1 DUTY | F INS.CLASS | Y CONNECTION |

| MAJOR CONTENTS | UNIT | TEST VALUE |
|--|--------|------------|
| STATOR RESISTANCE OF PHASE | OHM | 2.16951 |
| NO LOAD CURRENT | AMP | 1.37 |
| NO LOAD INPUT | W | 143.9 |
| CORE LOSS(Pfe) | W | 43.3 |
| WINDAGE FRICTION LOSS(Pfw) | W | 91.9 |
| STATOR WINDING LOSS(Pcu1) | W | 185.1 |
| ROTOR WINDING LOSS(Pcu2) | W | 108.7 |
| STRAY LOAD LOSS(Ps) | W | 17.5 |
| FULL LOAD CURRENT | AMP | 5.33 |
| LOCKED ROTOR CURRENT | AMP | 36.45 |
| LOCKED ROTOR CURRENT/FULL LOAD CURRENT | P.U. | 6.88 |
| FULL LOAD TORQUE | N.m | 9.88 |
| LOCKED ROTOR TORQUE | N.m | 23.08 |
| LOCKED ROTOR TORQUE/FULL LOAD TORQUE | P.U. | 2.32 |
| PULL OUT TORQUE | N.m | 29.63 |
| PULL OUT TORQUE/FULL LOAD TORQUE | P.U. | 2.98 |
| INPUT @ FULL LOAD | kW | 3.45 |
| EFFICIENCY @ FULL LOAD | % | 87.05 |
| POWER FACTOR @ FULL LOAD | | 0.90 |
| FULL LOAD SLIP | % | 3.377 |
| FULL LOAD SPEED | r/min | 2898.7 |
| STATOR WINDING TEMPERATURE RISE | K | 48 |
| D.E. BEARINGS TEMPERATURE BY PT100 | Deg. C | 34.1 |
| AMBIENT TEMPERATURE OF TESTING | Deg. C | 7.7 |
| NOISE | dB(A) | 73 |
| VIBRATION | mm/s | 0.6 |

The data above is calculated as per IEC 34-2,all data at nominal Volts.

| | | | | | |
|--|--------------------------|-------------------|--|--|--|
| | ROYCE CROSS GROUP | SERIAL NO. | | | |
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ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

ROYCE CROSS GROUP

| | | | | | |
|------------|------------|----------------|-------|-------------------|--------|
| Type | Y3-100L-2 | Poles | 2 | Power | 3.0 kW |
| Voltage | 415 V | Current | 5.3 A | Frequency | 50 Hz |
| Speed | 2881 r/min | Duty | S1 | Connection | Y |
| Ins. class | F | Weight | 0 kg | | IP55 |

NO LOAD TEST

| VOL | mul. | Hz | I01 | I02 | I03 | mul. | W1 | W2 | mul. | Ω |
|-------|------|----|-------|-------|-------|------|--------|-------|------|------------|
| 459.0 | 1 | 50 | 1.655 | 1.589 | 1.466 | 1 | -277.8 | 433.7 | 1 | 50.4 1.876 |
| 415.8 | 1 | 50 | 1.442 | 1.376 | 1.307 | 1 | -195.8 | 341.0 | 1 | 50.4 1.876 |
| 361.8 | 1 | 50 | 1.213 | 1.185 | 1.100 | 1 | -131.2 | 265.6 | 1 | 50.2 1.875 |
| 308.1 | 1 | 50 | 1.018 | 1.024 | 0.925 | 1 | -79.9 | 205.2 | 1 | 50.2 1.875 |
| 253.6 | 1 | 50 | 0.850 | 0.869 | 0.773 | 1 | -36.3 | 152.8 | 1 | 50.2 1.875 |
| 207.4 | 1 | 50 | 0.712 | 0.752 | 0.690 | 1 | -11.6 | 120.8 | 1 | 50.0 1.874 |
| 177.1 | 1 | 50 | 0.678 | 0.691 | 0.652 | 1 | -6.0 | 111.5 | 1 | 49.6 1.871 |
| 145.6 | 1 | 50 | 0.632 | 0.652 | 0.636 | 1 | 0.9 | 101.0 | 1 | 49.1 1.868 |
| 130.3 | 1 | 50 | 0.622 | 0.636 | 0.619 | 1 | 7.3 | 92.7 | 1 | 48.9 1.866 |

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| ROYCE CROSS GROUP | Manufacturing Date | Serial No |
| | | |
| | Test Date | Report Number |
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|------------|-------------------|---------|--------------|------------|------|-----------|
| Type | Y3-100L-2 | Poles | 2 | Power | 3.0 | kW |
| Voltage | 415 V | Current | 5.3 A | Frequency | 50.0 | Hz |
| Speed | 2881 r/min | Duty | S1 | Connection | Y | |
| Ins. class | F | Weight | 0 kg | | IP55 | |

LOCKED ROTOR TEST

| VOL | mul. | Ik1 | Ik2 | Ik3 | mul. | W1 | W2 | mul. | Torqu N. m |
|-------|------|-------|-------|-------|------|-------|-------|------|---------------|
| 415.9 | 1.0 | 1.819 | 1.819 | 1.846 | 20.0 | 125.3 | 756.3 | 20 | 23.20 |
| 368.4 | 1.0 | 1.524 | 1.524 | 1.549 | 20.0 | 98.4 | 562.8 | 20 | 17.04 |
| 321.3 | 1.0 | 1.267 | 1.266 | 1.289 | 20.0 | 69.5 | 406.4 | 20 | 12.11 |
| 274.8 | 1.0 | 1.037 | 1.036 | 1.058 | 20.0 | 43.5 | 282.5 | 20 | 8.27 |
| 215.5 | 1.0 | 0.766 | 0.765 | 0.782 | 20.0 | 18.9 | 160.8 | 20 | 4.57 |
| 169.1 | 1.0 | 0.571 | 0.569 | 0.579 | 20.0 | 6.9 | 92.1 | 20 | 2.54 |
| 111.3 | 1.0 | 0.350 | 0.348 | 0.354 | 20.0 | 0.5 | 36.2 | 20 | 0.94 |
| 65.4 | 1.0 | 0.198 | 0.197 | 0.200 | 20.0 | -0.3 | 11.8 | 20 | 0.29 |

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|------------|------------|--|---------|-------|--|------------|-------|--|
| Type | Y3-100L-2 | | Poles | 2 | | Power | 3 kW | |
| Voltage | 415 V | | Current | 5.3 A | | Frequency | 50 Hz | |
| Speed | 2881 r/min | | Duty | S1 | | Connection | Y | |
| Ins. class | F | | Weight | 0 kg | | | IP55 | |

TEMPERATURE RISE TEST

| TIME (h:min) | V | I1 | I2 | I3 | mul. | W1 | W2 | mul. | T1 °C | T2 °C | T3 °C | T4 °C | T5 °C | T6 °C | T7 °C | T8 °C | T9 °C | T10 °C | T11 °C | T12 °C | T13 °C | |
|-----------------|-------|-------|-------|-------|------|----------|--------|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----|
| 14:00 | 415.4 | 2.688 | 2.713 | 2.660 | 2 | 618.9 | 1128.2 | 2 | 39.3 | — | 60.2 | 58.8 | — | — | — | — | — | — | — | — | — | 7.4 |
| 14:30 | 414.6 | 2.681 | 2.709 | 2.659 | 2 | 617.0 | 1124.4 | 2 | 37.5 | — | 58.1 | 56.7 | — | — | — | — | — | — | — | — | — | 7.3 |
| 15:00 | 415.1 | 2.689 | 2.715 | 2.661 | 2 | 618.8 | 1128.2 | 2 | 36.2 | — | 57.7 | 56.3 | — | — | — | — | — | — | — | — | — | 7.7 |
| 15:30 | 415.5 | 2.700 | 2.726 | 2.677 | 2 | 623.4 | 1134.5 | 2 | 34.8 | — | 57.5 | 56.1 | — | — | — | — | — | — | — | — | — | 7.5 |
| 16:00 | 415.4 | 2.693 | 2.717 | 2.663 | 2 | 619.8 | 1130.1 | 2 | 34.1 | — | 57.3 | 55.9 | — | — | — | — | — | — | — | — | — | 7.9 |
| 最后三点平均值 | | 5.387 | | | A | 3503.231 | | W | 34.1 | — | 57.5 | 56.1 | — | — | — | — | — | — | — | — | — | 7.7 |

T1 T2: DE BEARING TEMPERATURE
T3~T10: DE WINDING TEMPERATURE

T11: CORE TEMPERATRE
T13: AMBIENT TEMPERATURE

T12: FRAME TEMPERATRE

WINDING RESISTANCE (HOT) AT END OF TEMPERATURE RISE TEST

| | | | | | | | | |
|------------|--------|--------|--------|--------|--------|--------|--|--|
| TIME (S) | 30 | 40 | 50 | 60 | 70 | 80 | | |
| RESISTANCE | 1.9160 | 1.9130 | 1.9110 | 1.9085 | 1.9070 | 1.9050 | | |

WINDING RESISTANCE (COLD)

| △ | U1-V1 | U1-W1 | V1-W1 | AVERAGE | MIN | AMBIENT TEM. |
|---|-------|-------|-------|---------|-------|--------------|
| | | | | | | |
| Y | U1-U2 | V1-V2 | W1-W2 | AVERAGE | MIN | AMBIENT TEM. |
| | 1.586 | 1.59 | 1.591 | 1.589 | 1.586 | 6.7 °C |

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Manu. Date

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| Type | Y3-100L-2 | Poles | 2 | output Power | 3.0 | kW | | |
| Voltage | 415 | V | Current | 5.3 | A | Frequency | 50.0 | Hz |
| Speed | 2881 | r/min | Duty | S1 | Connection | Y | | |
| Ins. class | F | Weight | 0 | kg | IP55 | | | |

LOAD TEST

| V | Hz | A1 (unit) | A2 (unit) | A3 (unit) | mul. | W1 (unit) | W2 (unit) | mul. | r/min |
|-------|-------|--------------|--------------|--------------|------|--------------|---------------|------|--------|
| 415.5 | 50.00 | 4.008 | 4.027 | 3.980 | 2 | 961.9 | 1668.2 | 2 | 2860.0 |
| 415.6 | 50.00 | 3.185 | 3.201 | 3.163 | 2 | 764.4 | 1325.7 | 2 | 2889.8 |
| 415.2 | 50.00 | 2.931 | 2.959 | 2.905 | 2 | 688.4 | 1224.9 | 2 | 2899.6 |
| 414.9 | 50.00 | 2.682 | 2.709 | 2.668 | 2 | 615.4 | 1121.9 | 2 | 2909.3 |
| 414.8 | 50.00 | 2.104 | 2.122 | 2.064 | 2 | 432.0 | 881.0 | 2 | 2933.5 |
| 415.4 | 50.00 | 1.571 | 1.588 | 1.538 | 2 | 247.6 | 657.5 | 2 | 2956.3 |
| 415.3 | 50.00 | 1.138 | 1.150 | 1.071 | 2 | 56.9 | 451.4 | 2 | 2977.1 |

| % LOAD | OUTPUT W | INPUT W | AMPS A | Pcu1 W | SLIP % | Pcu2 W | Ps W | EFF % | P. F. |
|------------|-------------|------------|-----------|-----------|-----------|-----------|---------|----------|-------|
| 150 | 4500 | 5374.6 | 8.180 | 435.5 | 5.374 | 262.9 | 41.0 | 83.73 | 0.914 |
| 125 | 3750 | 4379.0 | 6.675 | 290.0 | 4.349 | 176.1 | 27.7 | 85.64 | 0.913 |
| 100 | 3000 | 3446.4 | 5.333 | 185.1 | 3.377 | 108.7 | 17.5 | 87.05 | 0.899 |
| 75 | 2250 | 2563.7 | 4.105 | 109.7 | 2.430 | 58.5 | 10.3 | 87.76 | 0.869 |
| 50 | 1500 | 1726.3 | 3.038 | 60.1 | 1.560 | 25.3 | 5.7 | 86.89 | 0.790 |
| 25 | 750 | 924.0 | 2.133 | 29.6 | 0.768 | 6.5 | 2.7 | 81.16 | 0.603 |

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| Voltage | 415 | V | Current | 5.3 | A | Frequency | 50.0 | Hz |
| Speed | 2881 | r/min | Duty | S1 | Connection | Y | | |
| Ins. class | F | Weight | 0 | kg | IP55 | | | |

Load Curve

