

VALIADIS S.A.

ELECTRIC MOTOR TEST REPORT - THREE PHASE INDUCTION MOTOR

| NAMEPLATE DATA | | IEC TYPE | | 45 KW | | 988 RPM | | |
|-----------------------|--|------------|--|-------------|--|------------------|--|--|
| K280S-6 FRAME | | 3 PHASE | | 400 VOLTS | | 50 HZ / CYCLES | | |
| 93.1 EFFICIENCY | | 79.6 AMPS | | 55 IP | | IC411 IC | | |
| 6 POLE | | S1 DUTY | | 0.876 PF | | N/A EFF2 | | |
| VALIADIS MANUFACTURER | | SERIAL NO. | | F INS.CLASS | | DELTA CONNECTION | | |

| TEST DATA | NO LOAD | 25% LOAD | 50% LOAD | 75% LOAD | 100% LOAD | 110% LOAD | 125% LOAD | LOCKED |
|------------|---------|----------|----------|----------|-----------|-----------|-----------|---------|
| | | | | | | | | ROTOR |
| EFFICIENCY | 0 | 88.13 | 91.92 | 93.04 | 93.11 | 92.94 | 92.56 | |
| PF | 0.085 | 0.650 | 0.797 | 0.857 | 0.876 | 0.873 | 0.864 | 0.386 |
| RPM | 1000 | 997 | 994 | 991 | 988 | 986 | 984 | 0 |
| SLIP | 0.00% | 0.34% | 0.61% | 0.89% | 1.21% | 1.37% | 1.63% | 100.00% |
| AMPS | 23.59 | 28.36 | 44.35 | 61.09 | 79.62 | 88.04 | 101.56 | 495.1 |
| VOLTS | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| TORQUE NM | 0 | 107.8 | 216.3 | 325.3 | 435.2 | 479.5 | 546.3 | 820.9 |
| KW INPUT | 1.385 | 12.77 | 24.48 | 36.28 | 48.33 | 53.26 | 60.77 | 132.27 |
| KW OUTPUT | 0 | 11.25 | 22.50 | 33.75 | 45.00 | 49.50 | 56.25 | |

| LOSSES(kw) | 25% LOAD | 50% LOAD | 75% LOAD | 100% LOAD | 110% LOAD | 125%LOAD |
|----------------------|----------|----------|----------|-----------|-----------|----------|
| STATOR LOSS Pcu1 | 0.155 | 0.379 | 0.718 | 1.220 | 1.49 | 1.98 |
| STATOR LOSS % | 1.21% | 1.55% | 1.98% | 2.52% | 2.80% | 3.27% |
| ROTOR LOSS Pcu2 | 0.039 | 0.140 | 0.307 | 0.558 | 0.70 | 0.94 |
| ROTOR LOSS % | 0.30% | 0.57% | 0.84% | 1.15% | 1.31% | 1.55% |
| CORE LOSS Pfe | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 |
| CORE LOSS % | 7.99% | 4.17% | 2.81% | 2.11% | 1.92% | 1.68% |
| WINDAGE/FRICTION Pfw | 0.269 | 0.269 | 0.269 | 0.269 | 0.269 | 0.269 |
| WINDAGE/FRICTION % | 2.11% | 1.10% | 0.74% | 0.56% | 0.51% | 0.44% |
| STRAY LOAD LOSS Ps | 0.064 | 0.122 | 0.181 | 0.242 | 0.266 | 0.304 |
| STRAY LOAD LOSS % | 0.50% | 0.50% | 0.50% | 0.50% | 0.50% | 0.50% |

Losses are measured/calculated as per IEC 34-2 - The Summation of Losses Method
All data is measured at Nominal Volts

TEMPERATURES

| | | | |
|-----------------------------------|---------------|--------------------------------------|----------------------|
| STATOR RESISTANCE COLD | 0.1041 OHMS @ | 28.7 DEG.C. | BETWEEN STATOR LEADS |
| STATOR RESISTANCE ADJUSTED | 0.128 OHMS @ | 90 DEG.C. | BETWEEN STATOR LEADS |
| STATOR RESISTANCE HOT | 0.124 OHMS | after test of temp rise | BETWEEN STATOR LEADS |
| WINDING TEMPERATURE RISE | 48.4 DEG.C. | at full load steady state at | 30 SECS |
| WINDING TEMPERATURE RISE | 49.8 DEG.C. | at full load steady state at | 0 SECS |
| PT100 TEMPERATURE OF DE WINDING | 85 DEG.C. | at full load steady state at ambient | 30.2 DEG.C. |
| PT100 TEMPERATURE OF NDE WINDING | N/A DEG.C. | at full load steady state at ambient | 30.2 DEG.C. |
| PT100 TEMPERATURE DE BEARING | 73.2 DEG.C. | at full load steady state at ambient | 30.2 DEG.C. |
| PT100 TEMPERATURE NDE BEARING | N/A DEG.C. | at full load steady state at ambient | 30.2 DEG.C. |
| PT100 TEMPERATURE IN TERMINAL BOX | 56.8 DEG.C. | at full load steady state at ambient | 30.2 DEG.C. |
| PT100 TEMPERATURE ON STATOR LEADS | 61.2 DEG.C. | at full load steady state at ambient | 30.2 DEG.C. |

OTHER

| | | | | | |
|------------------|------|-------------------|-----------------------|------|----------|
| NOISE LEVEL(Lp) | 70 | dB(A) @ 1meter | INSULATION RESISTANCE | 500 | MEG.OHMS |
| VIBRATION LEVEL | 2.3 | mm/sec on no load | D.E. BEARING | 6316 | C3 |
| WEIGHT | 536 | kg | N.D.E.BEARING | 6316 | C3 |
| H-POT TEST VOLTS | 1800 | VOLTS | | | |

| | | | | |
|-------------------------------------|--|---------|------------|--------------|
| VALIADIS S.A. | | SCALE | N/A | |
| | | DATE | 2003.08.23 | REV |
| K280S-6 45 kW 400 VOLTS 50 Hz | | DRAWN | | DOCUMENT NO. |
| | | APPRVD | | |
| | | CHECKED | | |

RESULT SUMMARY

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| | | | |
|------------------------------|-------------------|--------------------|-------------------------|
| NAMEPLATE DATA | IEC TYPE | 45 KW | 988 RPM |
| K280S-6 FRAME | 3 PHASE | 400 VOLTS | 50 HZ / CYCLES |
| 93.1 EFFICIENCY | 79.6 AMPS | 55 IP | IC411 IC |
| 6 POLE | S1 DUTY | 0.876 PF | N/A EFF2 |
| VALIADIS MANUFACTURER | SERIAL NO. | F INS.CLASS | DELTA CONNECTION |

| MAJOR CONTENTS | UNIT | TEST VALUE |
|--|----------|-------------|
| STATOR RESISTANCE OF PHASE TO PHASE | 90 DEG.C | OHM 0.128 |
| NO LOAD CURRENT | | AMP 23.59 |
| NO LOAD INPUT | | kW 1.385 |
| CORE LOSS(Pfe) | | kW 1.020 |
| WINDAGE FRICTION LOSS(Pfw) | | kW 0.269 |
| STATOR WINDING LOSS(Pcu1) | | kW 1.220 |
| ROTOR WINDING LOSS(Pcu2) | | kW 0.558 |
| STRAY LOAD LOSS(Ps) | | kW 0.242 |
| FULL LOAD CURRENT | | AMP 79.62 |
| LOCKED ROTOR CURRENT | | AMP 495.11 |
| LOCKED ROTOR CURRENT/FULL LOAD CURRENT | | P.U. 6.2 |
| LOCKED ROTOR INPUT @ FULL LOAD | | kW 132.27 |
| FULL LOAD TORQUE | | N.m 435.21 |
| LOCKED ROTOR TORQUE | | N.m 820.90 |
| LOCKED ROTOR TORQUE/FULL LOAD TORQUE | | P.U. 1.89 |
| PULL OUT TORQUE | | N.m 1059.9 |
| PULL OUT TORQUE/FULL LOAD TORQUE | | P.U. 2.44 |
| PULL UP TORQUE | | N.m 652.48 |
| PULL UP TORQUE/FULL LOAD TORQUE | | P.U. 1.50 |
| EFFICIENCY @ FULL LOAD | | % 93.11 |
| POWER FACTOR @ FULL LOAD | | 0.876 |
| FULL LOAD SLIP | | % 1.211 |
| FULL LOAD SPEED | | r/min 988 |
| STATOR WINDING TEMPERATURE RISE | 30 SECS | K 48.4 |
| D.E. BEARINGS TEMPERATURE BY PT100 | | Deg. C 73.2 |
| TEMPERATURE ON LEADS BY PT100 | | Deg. C 61.2 |
| TEMPERATURE IN TERMINAL BOX BY PT100 | | Deg. C 56.8 |
| AMBIENT TEMPERATURE OF TESTING | | Deg. C 30.2 |
| SOUND PRESSURE LEVEL | | dB(A) 70 |
| VIBRATION | | mm/s 2.3 |
| MOMENT OF INERTIA | | kgm2 1.3900 |
| WEIGHT | | kg 536 |

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

| | | | |
|---|----------------|------------|---------------------|
| VALIADIS S.A. K280S-6 45 kW 400 VOLTS 50 Hz | SCALE | N/A | |
| | DATE | 2003.08.23 | REV |
| | DRAWN | | DOCUMENT NO. |
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| | CHECKED | | |

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NAMEPLATE DATA

K280S-6 FRAME
 93.1 EFFICIENCY
 6 POLE
 VALIADIS MANUFACTURER

IEC TYPE

3 PHASE
 79.6 AMPS
 S1 DUTY
 SERIAL NO.

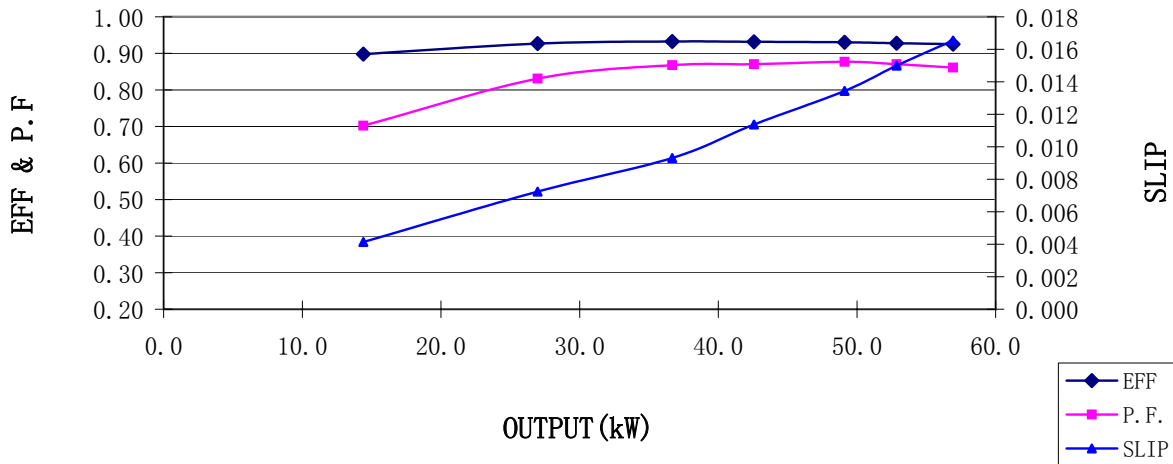
45 KW

400 VOLTS
 55 IP
 0.876 PF
 F INS.CLASS

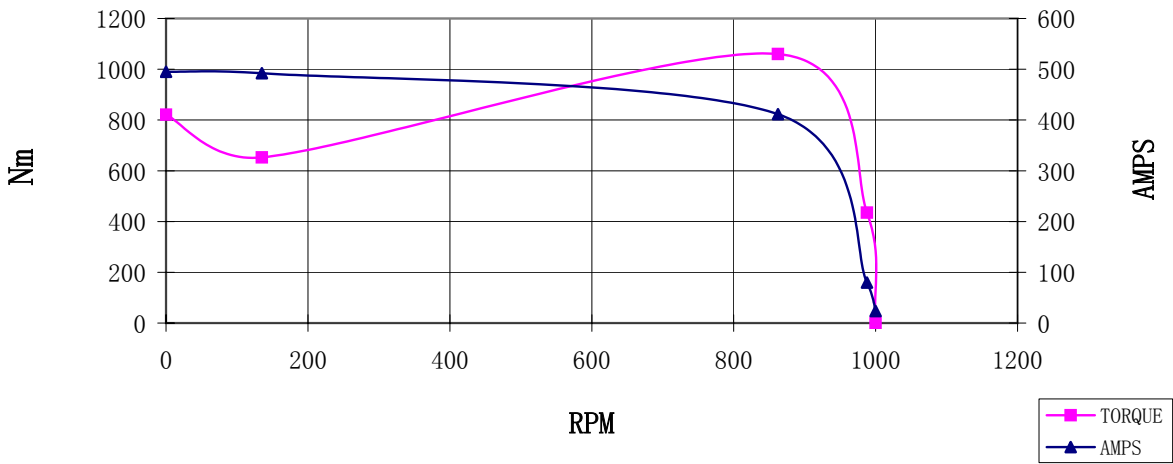
988 RPM

50 HZ / CYCLES
 IC411 IC
 N/A EFF2
 DELTA CONNECTION

LOAD



TORQUE & AMPS VS SLIP



| | | | |
|---|---------|------------|--------------|
| VALIADIS S.A. K280S-6 45 kW 400 VOLTS 50 Hz | SCALE | N/A | |
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NAMEPLATE DATA

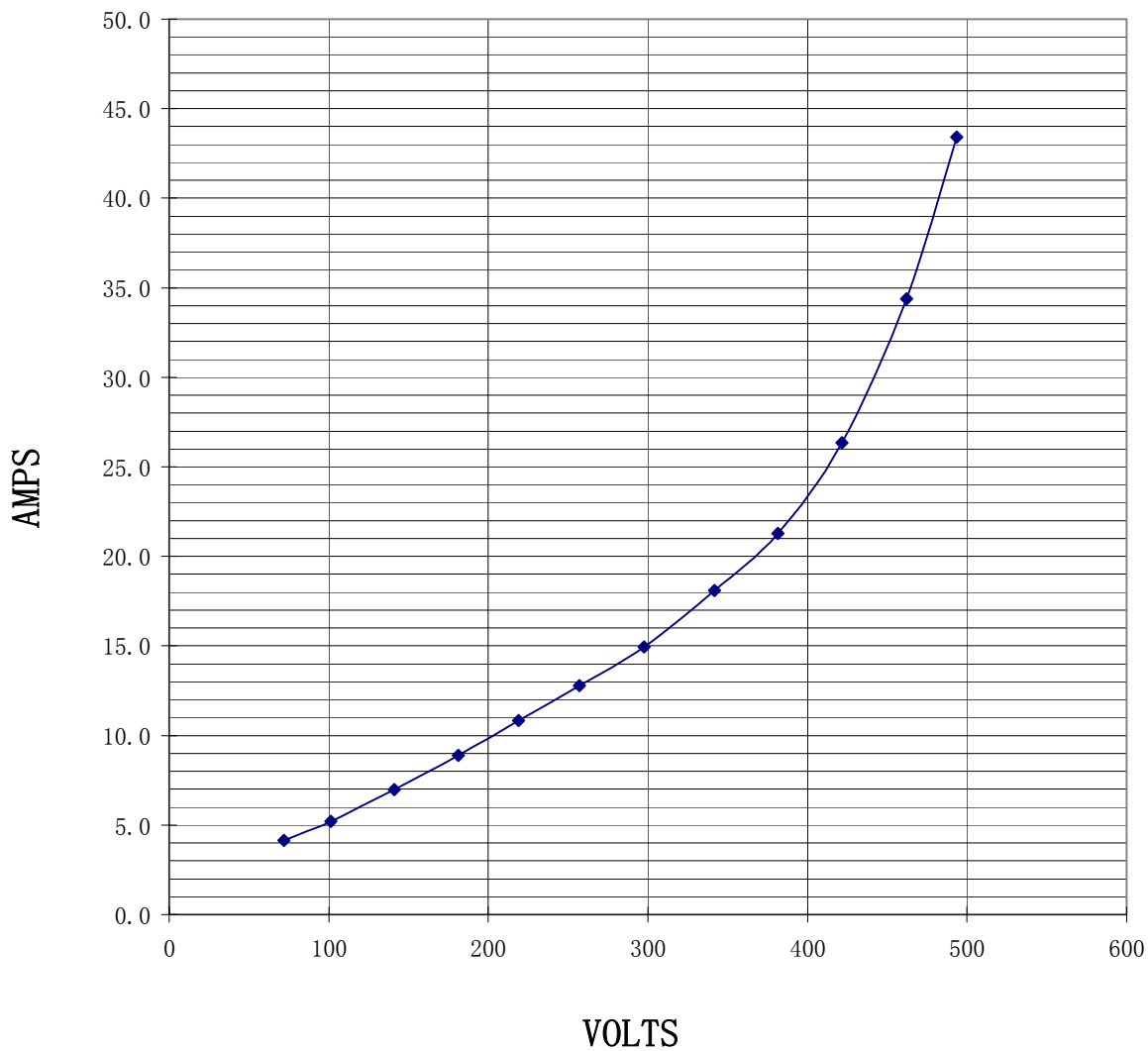
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IEC TYPE
 3 PHASE
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988 RPM
 50 HZ / CYCLES
 IC411 IC
 N/A EFF2
 DELTA CONNECTION

MAGNETIZATION CURVE - NO LOAD



| | | | |
|--|---------|------------|--------------|
| VALIADIS S.A. | SCALE | N/A | |
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