

Product Information Packet

January 12, 2017

Data shown is for the current revision model #. Ensure your nameplate model # matches.

| | |
|----------------------------|----------------------|
| Model Number: | 5KS509AAG205A |
| Catalog Number: | P163 |
| Instruction Manual: | GEI-100351 |
| Connection Diagram: | GEM2034E-FIG2 |
| Outline Drawing: | 50DP2100G001DBT |

| Accessory Connection Diagrams | | | |
|-------------------------------|------------|------------------------------|-----------|
| Bearing Thermocouple: | None | Heater: | 3027JE-1C |
| RTD: | 235A3027XC | Thermistor: | None |
| Thermostat: | None | Winding Thermocouple: | None |
| Bearing RTD: | None | | |

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Marks:

| | | | |
|----------------------------|----------------------|-------------------------------|----------|
| MODEL NUMBER: | 5KS509AAG205A | Estimated Weight: | 3070 Lbs |
| Outline Drawing: | 50DP2100G001DBT | Time Rating: | CONT |
| Connection Diagram: | GEM2034E-FIG2 | Enclosure: | WPI |
| Instruction Book: | GEI-100351 | Encl Construction: | OPEN |
| Design Code: | 50ED1313E | Ambient Max(°C): | 40 |
| Type: | KS | Alt Ambient Max(°C): | XX |
| Frame: | 509LL | Insulation Class: | F |
| Phases: | 3 | NEMA Design: | B |
| Poles: | 4 | Nominal Efficiency: | 95.0 % |
| Output Power: | 400HP 296KW | Guaranteed Efficiency: | 94.1 |
| RPM: | 1785 | 3/4 Load Efficiency: | 95.4 |
| Voltage: | 2300/4000 | KVA Code: | G |
| Hertz: | 60 | Max KVAR: | 92.8 |
| Amps - FL: | 90.6/52.1 | Power Factor: | 87.0 |
| Service Factor: | 1.15 | Bearing - DE: | 6318ZC3 |
| Alt Service Factor: | XX | Bearing - ODE: | 6315ZC3 |

Enclosure is Weather Protected One

Stamped Nameplate Notes:

NEMA ENCLOSURE WP-I, CSA ENCL DP
 GE SELF DECLARED CLASS I DIV 2 MOTOR
 MAX EXPOSED INTERNAL AND EXTERNAL SURFACE
 TEMPERATURES UNDER USUAL SERVICE CONDITION
 AT 1.00 S.F. DO NOT EXCEED 200 DEG C
 VIBRATION LIMIT = 0.150 IN/SEC
 TEMP CONTRL HTR LDS HE1-HE2 115V 200W
 MAXIMUM SPACE HEATER SURFACE
 TEMPERATURE 160 DEG C

Additional Information:

4 POLE, LL SHAFT EXTN
 FORMED COIL
 (2)GROUND BOLTS ON FRAME
 TEMP CONTRL 115V HEATER LEADS TO ACC BOX
 100 OHM WINDING RTD LEADS TO ACC BOX
 SUGGESTED WINDING RTD SETTINGS
 ALARM 165C TRIP 175C
 PROVISION FOR BTDS BOTH ENDS
 SUGGESTED BEARING RTD SETTINGS,IF PROVIDED
 ALARM 115C TRIP 125C
 2500 Cu. In. CBOX
 PROVISION FOR JACK SCREWS

Performance Characteristics

1st Winding 1st Connection

Design: 50ED1313E

Marks:

| LOAD % | 125.0 | 115.0 | 100.0 | 75.0 | 50.0 | 25.0 | 0.0 |
|--------|-------|-------|-------|-------|-------|-------|-------|
| % EFF | 94.65 | 94.89 | 95.38 | 95.42 | 95.08 | 92.66 | 0.00 |
| % PF | 87.17 | 87.22 | 87.9 | 84.66 | 77.94 | 57.84 | 4.79 |
| AMPS | 65.23 | 59.82 | 51.29 | 39.97 | 29.05 | 20.08 | 14.89 |

TORQ(FL)#FT 1176.64
AMPS(LR) 313.03

TORQ(LR)%FL 133.36
PF AT START 0.24

TORQ(BD)%FL 218.51

This motor is capable of two cold or one hot start with a maximum connected load inertia of 2716 Lb-Ft Sq (114.34 Kg-meter Sq)at 100% voltage, where the load torque varies with the square of the speed. Acceleration time with maximum inertia and the above load type is 16 seconds. Safe stall time at 100% voltage is 55 seconds cold, 29 seconds hot. Rotor inertia is 107.75 Lb-Ft Sq (4.54 Kg-meter Sq).

Open Circuit A-C: 1.074

Short Circuit D-C: 0.026

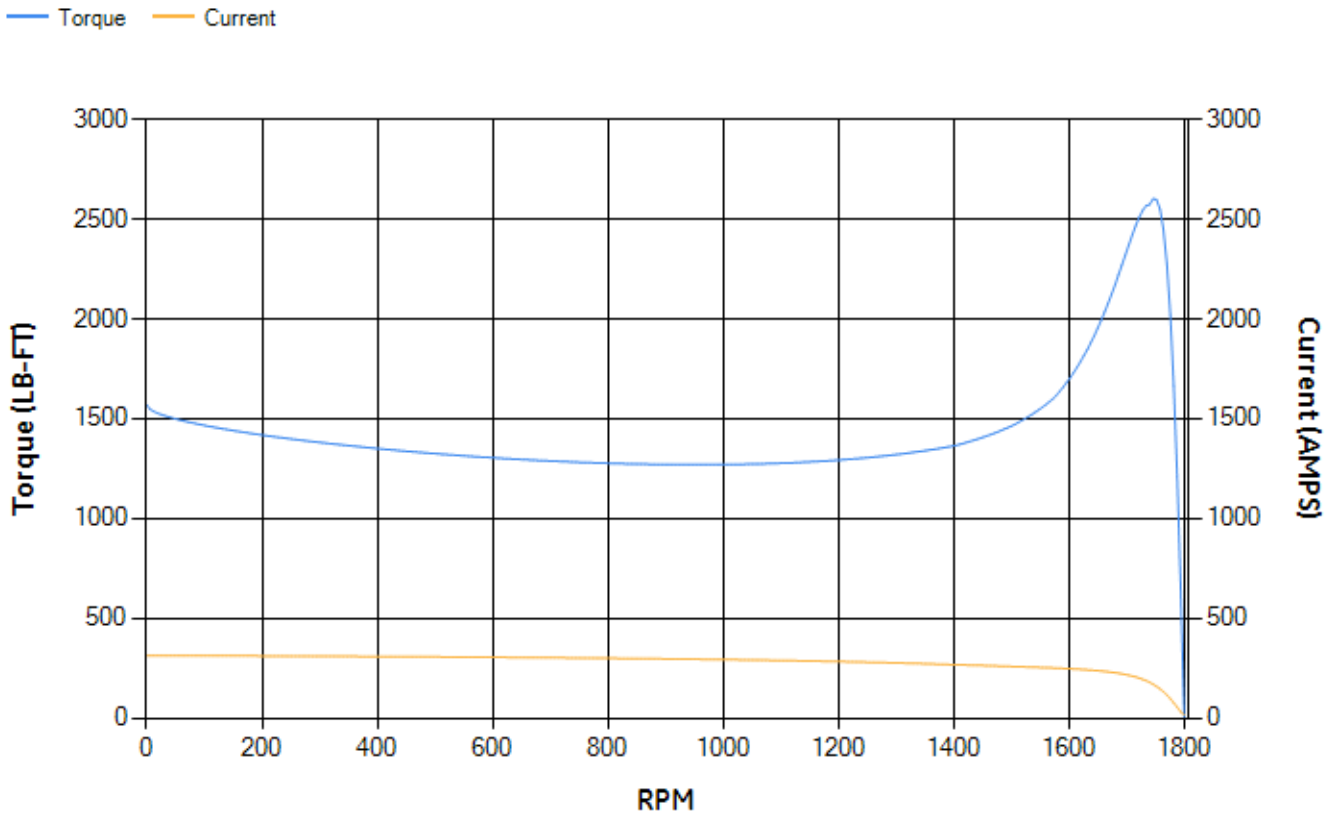
Short Circuit A-C: 0.048

X/R Ratio: 9.64

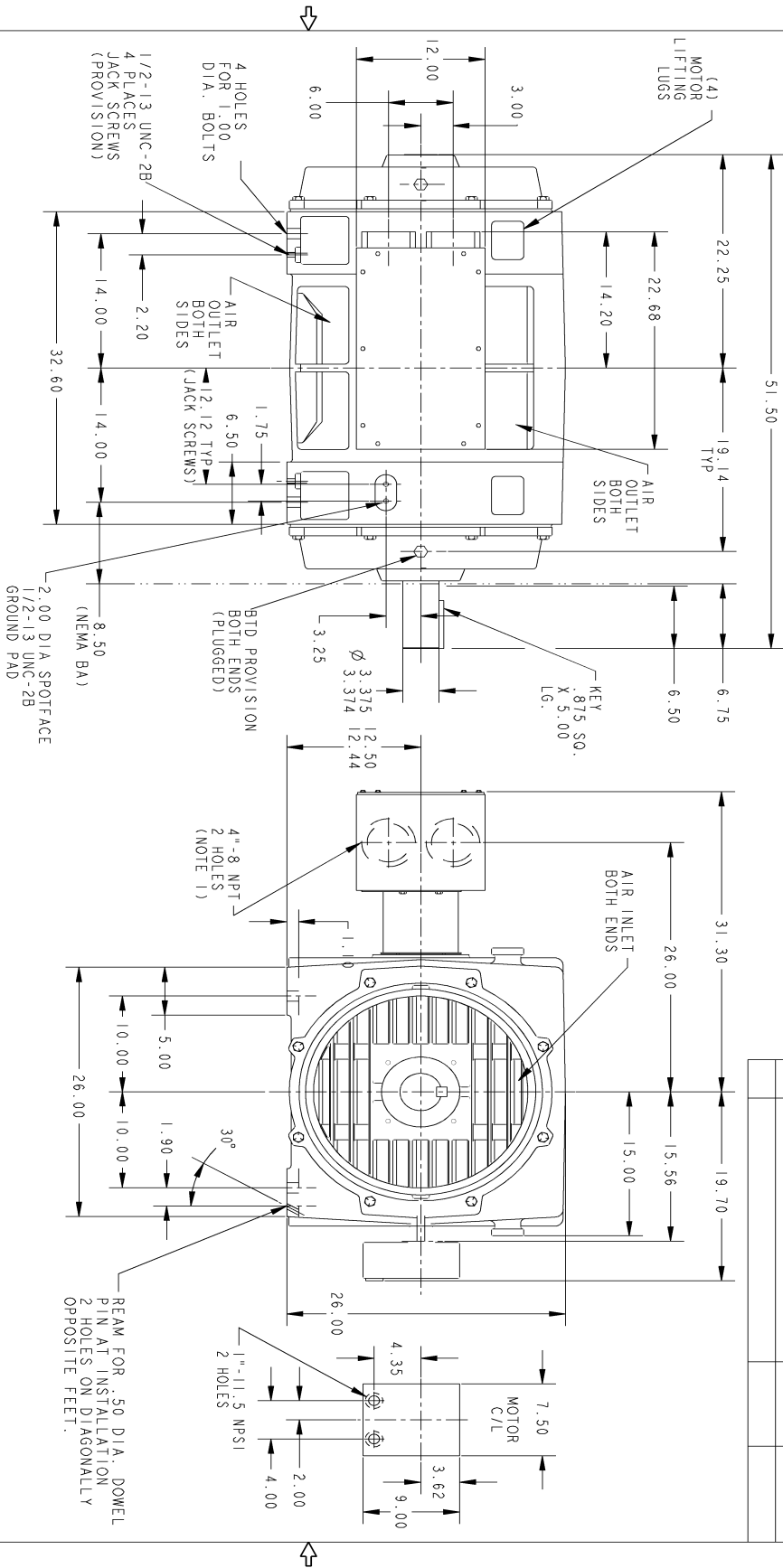
Stator Slots: 72

Rotor Slots: 56

Speed Torque Current Curve (First Connection, First Speed)

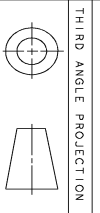


Marks:



NOTES:

- CONDUIT BOX MAY BE TURNED SO THAT ENTRANCE CAN BE MADE UPWARDS, DOWNWARDS, OR FROM EITHER SIDE. WHEN DOWNWARDS, ENTRANCE IS BELOW THE FEET.
- F1 ASSEMBLY AS SHOWN, F2 ASSEMBLY WILL HAVE CONDUIT BOX ON OPPOSITE SIDE



| | | | |
|------|-----------------|-----|-------|
| SIZE | DRAWING NO. | REV | SHEET |
| B | 50DP2100G001DBT | 0 | 1 |

| REV. | DESCRIPTION | DATE | APPROVED |
|------|-------------|------|----------|
| | | | |
| | | | |

| | | | |
|------------|-----------------------|----------|--|
| SIGNATURES | | DATE | |
| MODEL | MANCH | 09/29/16 | |
| DETAIL | MANCH | 09/29/16 | |
| DESIGNED | ADJ | 09/29/16 | |
| ENGRS | | | |
| QUALITY | | | |
| ISSUED | MANCH | 09/29/16 | |
| SCALE: .10 | REF.: 50DP2100G001DBA | | |

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OUTLINE

509 DP/MP/L 2500 CU/NC/B JACK SCREWS PROV ACC C/B BRG RIDS PROV 21 GROUND PADS

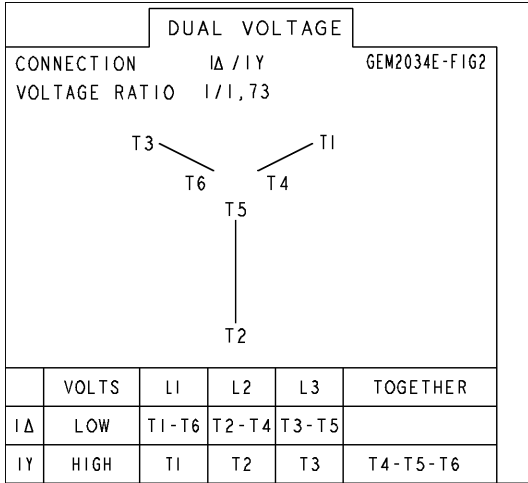
50DP2100G001DBT

SHEET 1 of 1

DIMENSIONS ARE IN INCHES

Marks:

Connection Diagram
GEM2034E-FIG2



Heater Connection
3027JE-1C

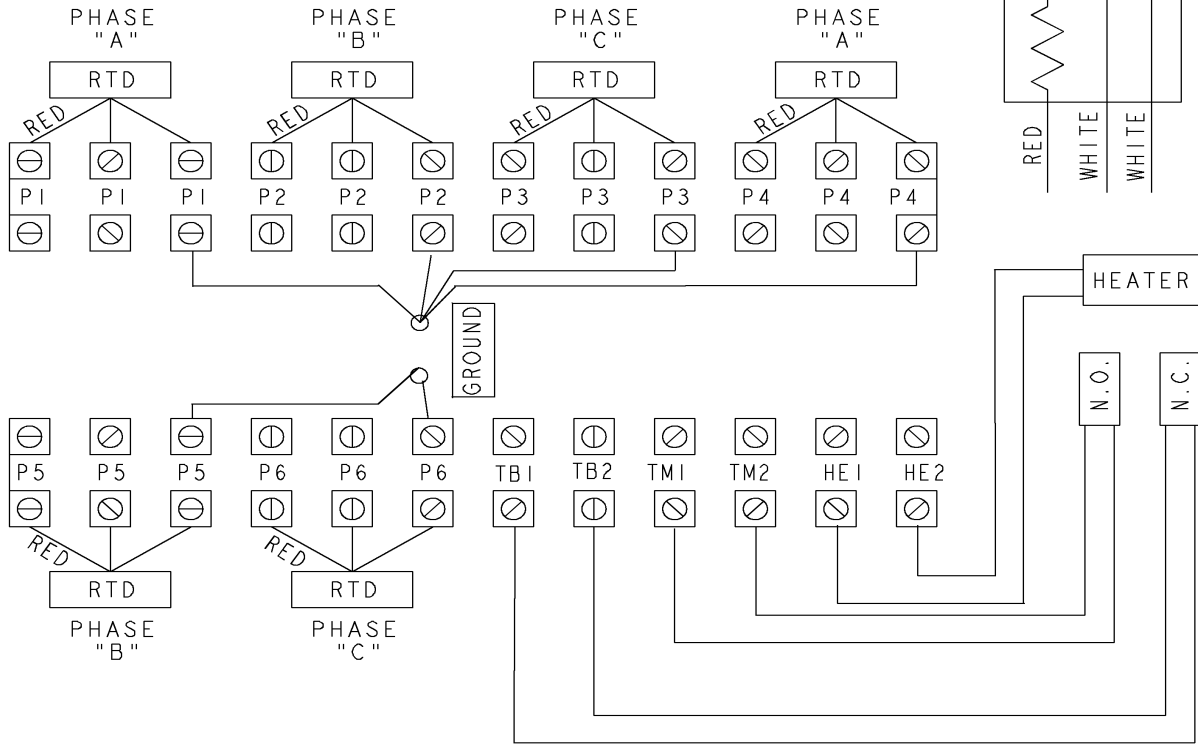
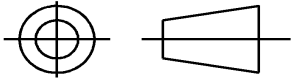


SHEET 0
REV 0
235A3027XC
A
SIZE DRAWING NO.

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| REVISIONS | | | |
|-----------|-------------|------|----------|
| REV. | DESCRIPTION | DATE | APPROVED |
| | | | |

THIRD ANGLE PROJECTION



- NOTE 1: TERMINAL LABELS ARE PROVIDED FOR ACCESSORIES THAT MAY OR MAY NOT BE INCLUDED WITH THE MOTOR.
- NOTE 2: SPARE RTDS (P7 & P8) FURNISHED IN CASE OF FAILURE IN OTHER RTDS (P1-P6). PHASE LOCATION WILL DEPEND UPON NUMBER OF POLES WINDING CONFIGURATION.
- NOTE 3: IT IS RECOMMENDED THAT RTDS BE GROUND AT EITHER THE MACHINE OR CONNECTED TO A GROUND CONTROL CIRCUIT. FOR PROPER OPERATION DO NOT GROUND AT THE MACHINE IF CONNECTED TO A GROUND CIRCUIT AT THE CONTROL.

Part must conform to SI 900000 Sect. 4, Toxicity Procedure

| | | |
|-------------------------------|-------------------------|----------|
| FOR ADDITIONAL INFO REFER TO: | SIGNATURES | DATE |
| APPLIED PRACTICES | MODEL | |
| DIMENSIONS ARE IN INCHES | DETAIL VIVEK | 01/08/15 |
| TOLERANCE ON: | CHECKED KARTHIK | 01/08/15 |
| 1 PL DECIMALS ± 0.1 | ENGRG | |
| 2 PL DECIMALS ± 0.02 | MFG | |
| 3 PL DECIMALS ± 0.005 | QUALITY | |
| ANGLES ± 0.5 | ISSUED VIVEK | 01/08/15 |
| FRACTIONS ± | | |
| FINISH ✓ | | |
| MATERIAL | SOLID MODEL: MODEL NAME | |

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TITLE: **CONNECTION DIAGRAM**
IEC
WINDING RTD'S & T'STATS & HEATERS

SIZE DRAWING: A
235A3027XC
REV 0

SCALE: NA
SHEET 1 of 1

| End shield Assembly | | |
|---------------------|---------------|----------------|
| Part Description | DE Side Part# | ODE Side Part# |
| End Shield | 119D1850AT1 | 119D1853AW1 |
| Bearing | 235A2514AG01 | 235A2513AG01 |
| Slinger/Inproseal | 235A2300FR1 | |

| Fan & Fan Cover Assembly | |
|--------------------------|-------|
| Part Description | Part# |
| Fan | |
| Fan Cover | |

| Conduit & Accessories Box Assembly | |
|------------------------------------|-------------|
| Part Description | Part# |
| Conduit Box | 179B9025G01 |

| Mechanical Accessories | |
|------------------------|-------|
| Part Description | Part# |
| Brake | |
| Tachometer | |

