



**GE INDUSTRIAL MOTORS**  
a **WOLONG** company

# Product Technical Information

February 17, 2023

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

<b>Model Number:</b>	<b>5KS509DAJ6028</b>
<b>Catalog Number:</b>	<b>V959</b>
<b>Instruction Manual:</b>	GEI-M1045
<b>Connection Diagram:</b>	GEM2034E-FIG20
<b>Outline Drawing:</b>	148CB59VMJKFFAA0001

## Accessory Connection Diagrams

<b>Bearing Thermocouple:</b>	None	<b>Heater:</b>	3027JE-1C
<b>RTD:</b>	None	<b>Thermistor:</b>	None
<b>Thermostat:</b>	None	<b>Winding Thermocouple:</b>	None
<b>Bearing RTD:</b>	None		

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**Marks:**

<b>MODEL NUMBER:</b>	<b>5KS509DAJ6028</b>	<b>Estimated Weight:</b>	3929 Lbs
<b>Outline Drawing:</b>	148CB59VMJKFFAA0001	<b>Time Rating:</b>	CONT
<b>Connection Diagram:</b>	GEM2034E-FIG20	<b>Enclosure:</b>	WPI
<b>Instruction Book:</b>	GEI-M1045	<b>Encl Construction:</b>	OPEN
<b>Design Code:</b>	50ED1670A	<b>Ambient Max(°C):</b>	40
<b>Type:</b>	KS	<b>Alt Ambient Max(°C):</b>	--
<b>Frame:</b>	B509TP20	<b>Insulation Class:</b>	F
<b>Phases:</b>	3	<b>NEMA Design:</b>	B
<b>Poles:</b>	4	<b>Nominal Efficiency:</b>	96.2 %
<b>Output Power:</b>	500HP 370KW	<b>Guaranteed Efficiency:</b>	95.4 %
<b>RPM:</b>	1785	<b>3/4 Load Efficiency:</b>	--
<b>Voltage:</b>	460	<b>KVA Code:</b>	G
<b>Hertz:</b>	60	<b>Max KVAR:</b>	75.6
<b>Amps - FL:</b>	538.0	<b>Power Factor:</b>	90.5
<b>Service Factor:</b>	1.15	<b>Bearing - DE:</b>	6219ZC3
<b>Alt Service Factor:</b>	--	<b>Bearing - ODE:</b>	29330

**Enclosure is Weather Protected One**

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**Stamped Nameplate Notes:**

NEMA ENCLOSURE WP-I, CSA ENCL DP  
 VIBRATION LIMIT = 0.150 IN/SEC  
 THERMOSTAT LEADS TB1-TB2:TRIP  
 HTR LDS HE1-HE2 115V 350W  
 UPPER BRG LUBE OIL: 10.82 QTS; 6 DEG C TO  
 40 DEG C :ISO 150(MINERAL OR SYNTHETIC)  
 -15 DEG C TO 5 DEG C : ISO 68 SYNTHETIC  
 LOWER BRG LUBE OIL: 2.5 QTS; 0 DEG C TO  
 40 DEG C : ISO 32(MINERAL OR SYNTHETIC)  
 -15 DEG C TO 0 DEG C : ISO 32 SYNTHETIC  
 2750 LBS MIN CONTINUOUS DOWNTHRUST REQ"D  
 CUSTOM POLYSEAL  
 SHAFT GROUND RING AT LOWER END BRG CAP  
 INSULATED BEARING SYSTEM AT UPPER END  
 VERTICAL NPI  
 INVERTER DUTY PER NEMA MG1 PART 31  
 ALTERNATE RATING FOR PWM CONTROL  
 1.0 SF. VAR TORQUE RANGE 0-60 HZ



**Additional Information:**

4 POLE, VERT HS HT NPI (1D)  
BOLTED COUPLING, BX=2.188  
FORMED COIL  
(3)NC CL-F ALARM T"STAT LDS TO CONDUIT BOX  
115V HEATER LEADS TO MAIN CONDUIT BOX  
RCF=1629 CPM CG=28.1 IN STAT DEF=0.0133 IN  
C/B GRD PLATE  
BEARING LIFE >200000 HRS AT 14300LB THRUST  
BEARING LIFE 8760 HOURS AT 31604 LB THRUST  
2500 CU. IN. CBOX



**Performance Characteristics**

1st Winding 1st Connection

**Design: 50ED1670A**

**Marks:**

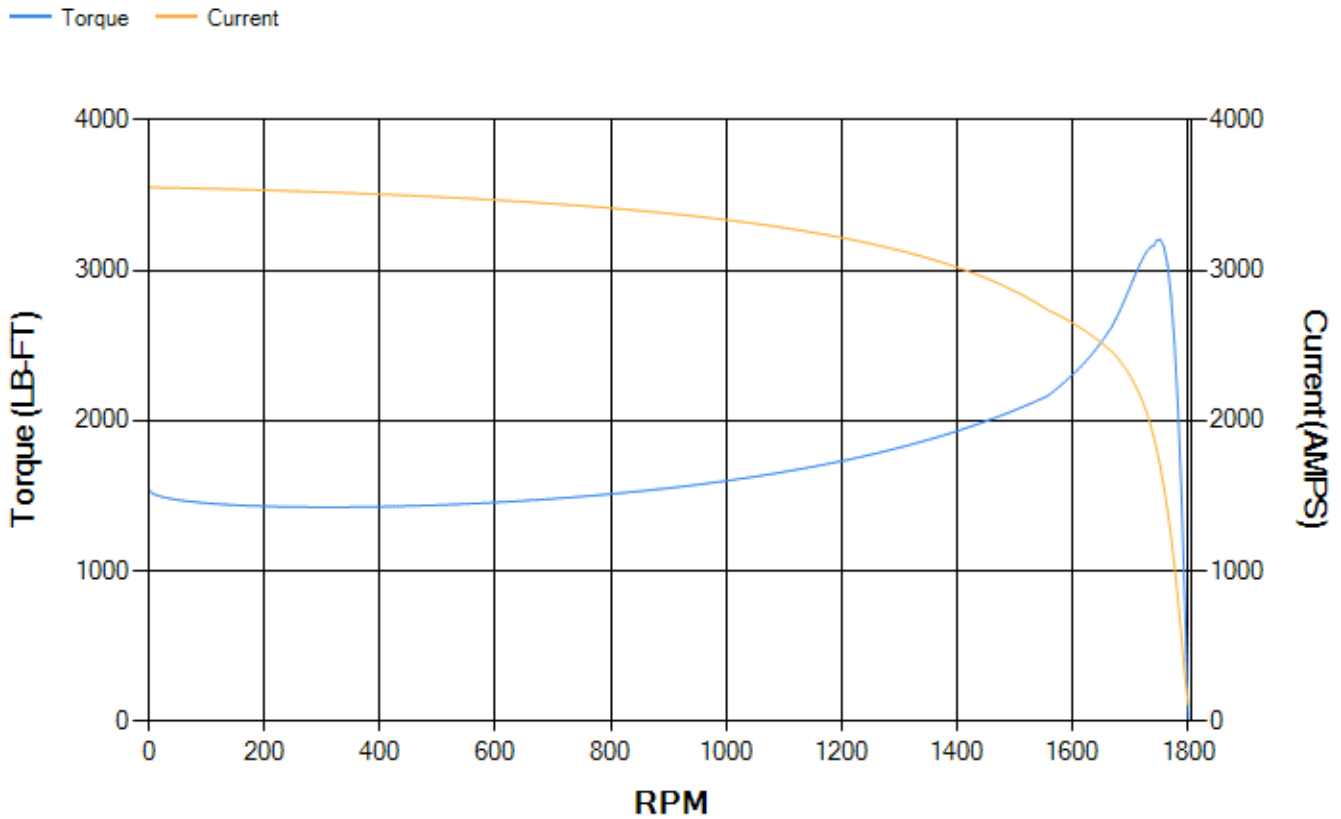
LOAD %	125.0	115.0	100.0	75.0	50.0	25.0	0.0
% EFF	95.3	95.53	96.01	96.08	95.87	93.96	0.00
% PF	89.79	90.2	91.29	89.97	86.53	72.05	5.92
AMPS	683.66	624.56	533.28	405.99	282.06	172.81	105.4

<b>TORQ(FL)#FT</b>	1470.16	<b>TORQ(LR)%FL</b>	105.13	<b>TORQ(BD)%FL</b>	215.06
<b>AMPS(LR)</b>	3553.47	<b>PF AT START</b>	0.2		

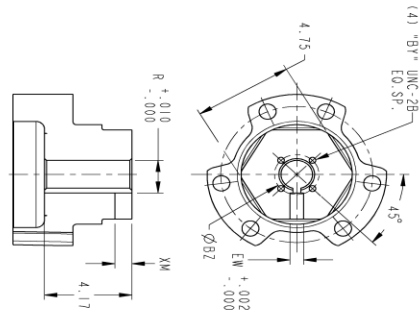
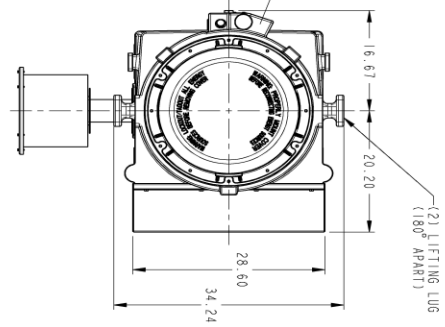
This motor is capable of two cold or one hot start with a maximum connected load inertia of 4825 Lb-Ft Sq (203.13 Kg-meter Sq)at 100% voltage, where the load torque varies with the square of the speed. Acceleration time with maximum inertia and the above load type is 24 seconds. Safe stall time at 100% voltage is 71 seconds cold, 40 seconds hot. Rotor inertia is 155.16 Lb-Ft Sq (6.53 Kg-meter Sq).

<b>Open Circuit A-C:</b>	1.706	<b>Short Circuit D-C:</b>	0.028
<b>Short Circuit A-C:</b>	0.047	<b>X/R Ratio:</b>	10.713
<b>Stator Slots:</b>	72	<b>Rotor Slots:</b>	56

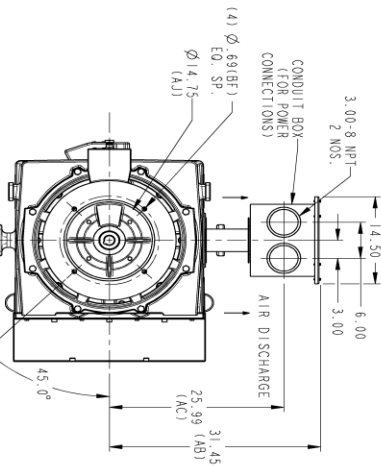
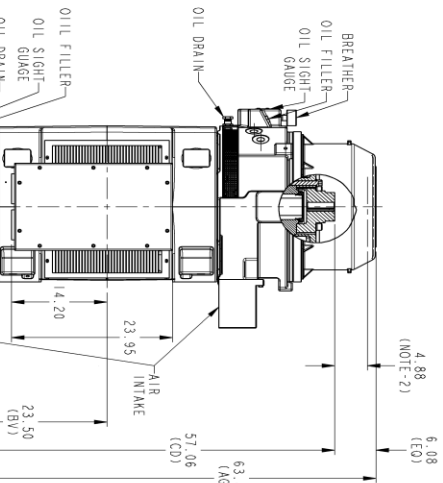
**Speed Torque Current Curve (First Connection, First Speed)**



Marks:



ENLARGED VIEW OF COUPLING

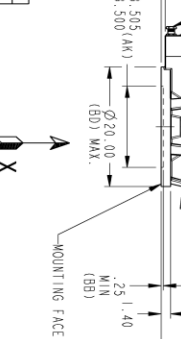
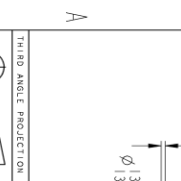


COUPLING DIMENSIONS					KEY WAY		
BY	BY	BZ	EW	R	XM		
1.50/1.502	1/4-20	2.125	.375	1.689	.56		
1.688	1/4-20	2.500	.375	1.859	.56		
1.751	1/4-20	2.500	.375	1.922	.56		
1.813	1/4-20	2.500	.500	2.033	.69		
1.938	1/4-20	2.500	.500	2.160	.69		
2.001	3/8-16	3.250	.500	2.273	.69		
2.188	3/8-16	3.250	.500	2.414	.69		
2.251	3/8-16	3.250	.500	2.477	.69		
2.438	3/8-16	3.250	.625	2.715	.81		
2.501	3/8-16	3.750	.625	2.718	.81		
2.688	3/8-16	3.750	.625	2.968	.81		
2.751	3/8-16	3.750	.625	3.032	.81		

- NOTES:
1. PROVIDED MOUNTING CONDITIONS PERMIT, CONDUIT BOX MAY BE TIPPED SO THAT ENTRANCE CAN BE MADE UPWARD, DOWNWARD, OR FROM EITHER SIDE.
  2. THE TOTAL HEIGHT OF PUMP SHAFT AND LOCKING NUT ABOVE COUPLING MUST NOT EXCEED THIS DIMENSION.
  3. FOR ESTIMATING ONLY, UNLESS ENDORSED FOR CONSTRUCTION.
  4. FOR SHIPPING WEIGHTS ADD FIVE PERCENT TO THE WEIGHTS.
  5. CENTER OF MOUNTING BOLT HOLES WITHIN .025 OF ANGLE & .025 OF RADIUS FROM CENTERLINE ON MOUNTING RABBIT.
  6. UPPER THROUST AND LOWER GUIDE BEARINGS ARE OIL LUBRICATED.
  7. TOLERANCE ON FACE ROUNDOFF AND PERMISSIBLE ECCENTRICITY OF MOUNTING RABBIT ARE .007 T. I. R.
  8. SMALL "BY" BORE GENERALLY NOT SUITABLE FOR SOIL FRAME RATINGS. CHECK SHAFT AND KEY STRESS BEFORE USING.

REV.	DESCRIPTION	DATE	APPROVED

148CB59VMJKFFAA0001 000	REV. 1
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SIGNATURES	DATE
HARRIKIRAW	07/15/21
HARRIKIRAW	07/15/21
BAGUI	07/15/21
HARRIKIRAW	07/15/21
HARRIKIRAW	07/15/21

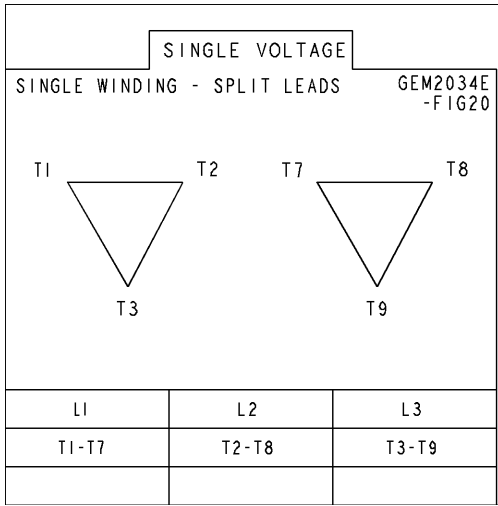
148CB59VMJKFFAA0001 000	REV. 1
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GE INDUSTRIAL MOTORS  
 WINDING COMPANY  
**OUTLINE NEMA 509 WPI**  
 VHS, 2500 CU IN COND BOX, 12300° ENTRY  
 D/20/SPH. ROL. BD-20

NEMA TYPE P BASE  
 DIMENSIONS IN INCHES  
 SCALE: 0.680  
 SHEET 1 OF 1

Marks:

**Connection Diagram**  
**GEM2034E-FIG20**



**Heater Connection**  
**3027JE-1C**

