

BALDOR® • RELIANCE 

Product Information Packet

IDVSM2334T

20HP, 1770RPM, 3PH, 60HZ, 256TC, 0960M, TEFC, F

| Part Detail | | | | | | | |
|-------------|--------|-------------|------------|-------------|--------|---------------|------------|
| Revision: | C | Status: | PRD/A | Change #: | | Proprietary: | No |
| Type: | AC | Elec. Spec: | 09WGT459 | CD Diagram: | CD0180 | Mfg Plant: | |
| Mech. Spec: | 09K146 | Layout: | 09LYK146 | Poles: | 04 | Created Date: | 11-27-2017 |
| Base: | RG | Eff. Date: | 02-27-2018 | Leads: | 9#10 | | |

| Specs | | | |
|---------------------------------|-------------------------|--------------------------------|-----------------------|
| Catalog Number: | IDVSM2334T | Insulation Class: | F |
| Enclosure: | TEFC | Inverter Code: | Inverter Duty |
| Frame: | 256TC | KVA Code: | J |
| Frame Material: | Iron | Lifting Lugs: | Standard Lifting Lugs |
| Output @ Frequency: | 20.000 HP @ 60 HZ | Locked Bearing Indicator: | Locked Bearing |
| Synchronous Speed @ Frequency: | 1800 RPM @ 60 HZ | Motor Lead Quantity/Wire Size: | 9 @ 10 AWG |
| Voltage @ Frequency: | 460.0 V @ 60 HZ | Motor Lead Exit: | Ko Box |
| | 230.0 V @ 60 HZ | Motor Lead Termination: | Flying Leads |
| XP Class and Group: | None | Motor Type: | 0960M |
| XP Division: | Not Applicable | Mounting Arrangement: | F1 |
| Agency Approvals: | CSA | Power Factor: | 83 |
| | UR | Product Family: | General Purpose |
| Auxillary Box: | No Auxillary Box | Pulley End Bearing Type: | Ball |
| Auxillary Box Lead Termination: | None | Pulley Face Code: | C-Face |
| Base Indicator: | Rigid | Pulley Shaft Indicator: | Standard |
| Bearing Grease Type: | Polyrex EM (-20F +300F) | Rodent Screen: | None |
| Blower: | None | Shaft Extension Location: | Pulley End |
| Current @ Voltage: | 24.000 A @ 460.0 V | Shaft Ground Indicator: | No Shaft Grounding |

| | | | |
|---------------------------------------|---------------------------|------------------------------------|----------------------------|
| | 48.000 A @ 230.0 V | Shaft Rotation: | Reversible |
| | 52.000 A @ 208.0 V | Shaft Slinger Indicator: | Shaft Slinger |
| Design Code: | A | Speed Code: | Single Speed |
| Drip Cover: | No Drip Cover | Motor Standards: | NEMA |
| Duty Rating: | CONT | Starting Method: | Direct on line |
| Electrically Isolated Bearing: | Not Electrically Isolated | Thermal Device - Bearing: | None |
| Feedback Device: | NO FEEDBACK | Thermal Device - Winding: | Normally Closed Thermostat |
| Front Face Code: | Standard | Vibration Sensor Indicator: | No Vibration Sensor |
| Front Shaft Indicator: | None | Winding Thermal 1: | None |
| Heater Indicator: | No Heater | Winding Thermal 2: | None |

| Nameplate NP3302L | |
|-------------------|---------------------|
| CAT NO | IDVSM2334T |
| SPEC. | 09K146T459G1 |
| FRAME | 256TC HP 20 TE |
| VOLTS | 230/460 |
| MAG CUR | 20.8/10.4 FLA 48/24 |
| RPM | 1770 RPM MAX 2700 |
| HZ | 60 PH 3 CLASS F |
| SER.F. | 1.00 SL HZ 1 |
| NEMA-NOM-EFF | 93 WK2 2.62 |
| RATING | 40C AMB-CONT |
| DE BRG | 6309 ODE BRG 6208 |
| CC | 010A SN |
| | 1.5:1 CHP PWM |

| Parts List | | |
|---------------|--|----------|
| Part Number | Description | Quantity |
| SA348220 | SA 09K146T459G1 | 1.000 EA |
| RA336772 | RA 09K146T459G1 | 1.000 EA |
| 09FN3001D01SP | EXTERNAL FAN, PLASTIC | 1.000 EA |
| 09CB3000SP | CONDUIT BOX CAST | 1.000 EA |
| 09GS1000SP | GASKET-CONDUIT BOX, 1/16 THICK LEXIDE | 1.000 EA |
| 10XN2520K12 | 1/4-20 X.75 GRD 5 | 2.000 EA |
| HW1001A25 | LOCKWASHER 1/4, ZINC PLT .493 OD, .255 I | 2.000 EA |
| WD1000B16 | T&B CX70TN TERMINAL | 1.000 EA |
| 59XW2520G07 | .25-20X.44,HEX SER WSHR,TAPTITE 2,GREEN | 1.000 EA |
| 09FE1100A14 | FREP ASSEMBLY, 09EP1100A14 | 1.000 EA |
| HW5100A08 | W3118-035 WVY WSHR (WB) | 1.000 EA |
| 10XN2520K28 | 1/4-20 X 1.75" HX HD SCRWGRADE 5, ZINC P | 2.000 EA |
| HW1001A25 | LOCKWASHER 1/4, ZINC PLT .493 OD, .255 I | 2.000 EA |
| 10XN2520K36 | 1/4-20 X 2.25" HX HD SCRWGRADE 5, ZINC P | 4.000 EA |
| HW1001A25 | LOCKWASHER 1/4, ZINC PLT .493 OD, .255 I | 4.000 EA |
| 09EP1300A12 | ENDPLATE, MACH | 1.000 EA |
| HW4600B44 | V-RING SLINGER 1.500 X 1.810 X .28 VITON | 1.000 EA |
| HA3113A02 | THRUBOLT 3/8-16 X 16.750 | 4.000 EA |
| HW1001A38 | LOCKWASHER 3/8, ZINC PLT .688 OD, .382 I | 4.000 EA |
| XY3816A12 | 3/8-16 FINISHED NUT | 4.000 EA |
| 09FH1000A38E | FAN COVER, MACH W/E-COAT | 1.000 EA |
| HA2081A05 | SPACER TUBE, 309 FAN HSG, 2.00 LONG | 4.000 EA |
| XY3816A12 | 3/8-16 FINISHED NUT | 4.000 EA |
| HW1001A38 | LOCKWASHER 3/8, ZINC PLT .688 OD, .382 I | 4.000 EA |

| Parts List (continued) | | |
|------------------------|--|----------|
| Part Number | Description | Quantity |
| HA6881 | BEI HS35 THRU SHAFT ENCODER PROTECTIVE C | 1.000 EA |
| 10XN1032K12 | 10-32 X .75 HD, GRADE 5 | 2.000 EA |
| HW1001A10 | WASHER, #10 SPLT LK, ZN X | 2.000 EA |
| HW1000A10 | #10 FLAT WASHER (SAE) | 2.000 EA |
| 09CB3500SP | CONDUIT BOX LID, CAST | 1.000 EA |
| 09GS1001SP | GASKET-CONDUIT BOX LID, 1/16 THICK LEXID | 1.000 EA |
| 51XW2520A12 | .25-20 X .75, TAPTITE II, HEX WSHR SLTD | 2.000 EA |
| HW2501G25 | KEY, 3/8 SQ X 2.875 | 1.000 EA |
| LB1115N | LABEL,LIFTING DEVICE (ON ROLLS) | 1.000 EA |
| HW4500A05 | 1669B ALEM/UNIV860 GR FTG X | 1.000 EA |
| HW4500A17 | 317400 ALEMITE GREASE RELIEF | 1.000 EA |
| HA4054 | SHORT T-DRAIN FITTING, .125" N.P.T. | 1.000 EA |
| HA4051A00 | PLASTIC CAP FOR GREASE FITTING | 1.000 EA |
| MJ1000A02 | GREASE, POLYREX EM EXXON (USe 4824-15A) | 0.080 LB |
| HW4500A03 | GREASE FITTING, .125 NPT 1610(ALEMITE) 8 | 1.000 EA |
| HW4500A17 | 317400 ALEMITE GREASE RELIEF | 1.000 EA |
| HA4054 | SHORT T-DRAIN FITTING, .125" N.P.T. | 1.000 EA |
| HA4051A00 | PLASTIC CAP FOR GREASE FITTING | 1.000 EA |
| HW2500A25 | WOODRUFF KEY USA #1008 #BLOW CARBON STEE | 1.000 EA |
| 51XB1214A20 | 12-14X1.25 HXWSSLD SERTYB | 1.000 EA |
| MG1025N19 | WILKOFASST, 778.50, RELIANCE BLUE-GREEN | 0.050 GA |
| 85XU0407S04 | 4X1/4 U DRIVE PIN STAINLESS | 2.000 EA |
| LB1119N | WARNING LABEL | 1.000 EA |
| LC0181 | CONNECTION LABEL | 1.000 EA |

| | | |
|----------|---|----------|
| NP3302L | ALUM INV UL CSA CC (W/OUT DESIGN FIELD) | 1.000 EA |
| 40PA1005 | PACKAGING GROUP, 09 STD | 1.000 EA |
| MN416A01 | TAG-INSTAL-MAINT no wire (1200/bx) 5/18 | 1.000 EA |

| | | | | | | | |
|------------|---------|--------------|-------|---|-------|----|--------|
| NP VOLTS | 230/460 | MAX SAFE RPM | 2700 | WYE CONN EQ CKT OHMS PER PHASE (BASE RATING, 20C) | | | |
| NP AMPS | 48/24 | Base Volt | 460 | R1 | 0.167 | X1 | 0.876 |
| HP | 20 HP | NL AMPS | 10.40 | R2 | 0.159 | X2 | 1.160 |
| BASE SPEED | 1772 | Slips(Hz) | 0.94 | | | XM | 30.000 |
| PHASE/HZ | 3/60 | Wk2 () | 0.000 | | | | |

Rated Full Load Data

| | RPM | HP | Torque | Volts | Freq-Hz | Amps |
|------------|--------|------|--------|-------|---------|------|
| Base Speed | 1771.9 | 20.0 | 59.3 | 460 | 60 | 24.0 |
| Max Speed | 2657 | 20.0 | 39.5 | 460 | 90 | 23.1 |
| Min Speed | 0 | 0.0 | 59.3 | 17.91 | 0.94 | 24.0 |


Load Performance at Base Speed

| | RPM | HP | Torque | Volts | Freq-Hz | Amps |
|-----------|--------|------|--------|-------|---------|------|
| No Load | 1798.9 | 0.0 | 0.0 | 460 | 60 | 10.4 |
| 1/4 | 1793.2 | 5.0 | 14.7 | 460 | 60 | 11.8 |
| 1/2 | 1786.4 | 10.0 | 29.4 | 460 | 60 | 15.0 |
| 3/4 | 1779.1 | 15.0 | 44.3 | 460 | 60 | 19.2 |
| Full Load | 1771.9 | 20.0 | 59.3 | 460 | 60 | 24.0 |
| O/L | 1741 | 40.1 | 121.0 | 460 | 60 | 48.7 |

Blower Data

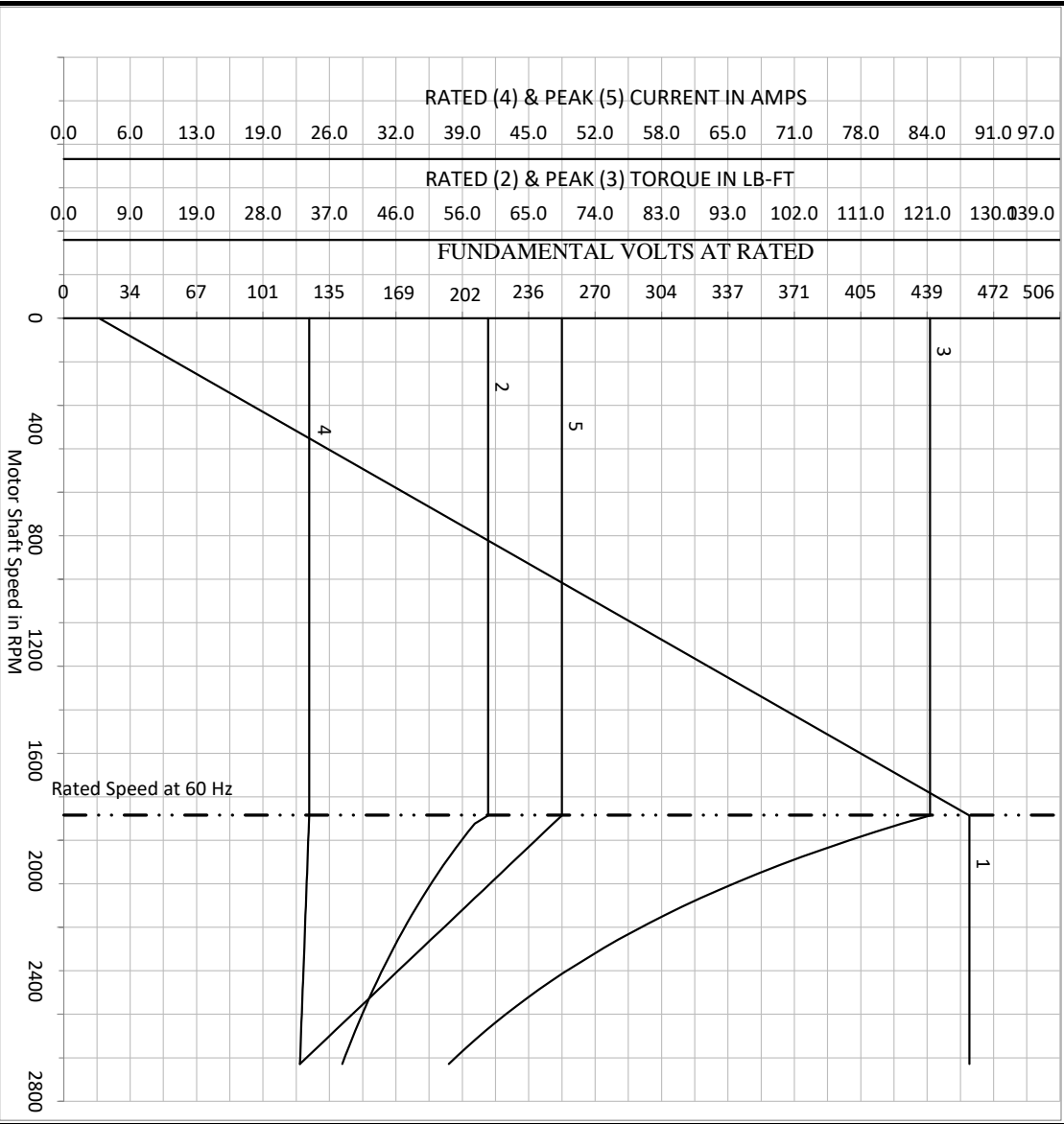
| | Volts | Ph/Hz | FL Amps | LR Amps | Frame | CFM |
|--|-------|-------|---------|---------|-------|-----|
| | | | | | | |
| | | | | | | |

Remarks: Calculated Data
Vector PWM Inverter Duty

| | | | | |
|---|-------|----------|---|----------------------------------|
|  | DR BY | USBRRANI | A-C MOTOR PERFORMANCE CURVES | 09WGT459 Record: 67965 |
| | CK BY | USBRRANI | | |
| A MEMBER OF THE ABB GROUP | | APP BY | USBRRANI | |
| | | DATE | 11/27/2017 | |

| | | | | | | | |
|------------|------------|--------------|-------|---|-------|----|--------|
| NP VOLTS | 230/460 | MAX SAFE RPM | 2700 | WYE CONN EQ CKT OHMS PER PHASE (BASE RATING, 20C) | | | |
| NP AMPS | 48/24 | Base Volt | 460 | R1 | 0.167 | X1 | 0.876 |
| HP | 20 HP | NL AMPS | 10.40 | R2 | 0.159 | X2 | 1.160 |
| BASE SPEED | 1771.90002 | Slips(Hz) | 0.94 | XM | | | 30.000 |
| PHASE/HZ | 3/60 | WK2 () | 0.000 | | | | |

Variable Speed AC Motor Curves
Vector PWM Inverter Duty



Calculated Data
Data Valid For Nameplate Speed Range only

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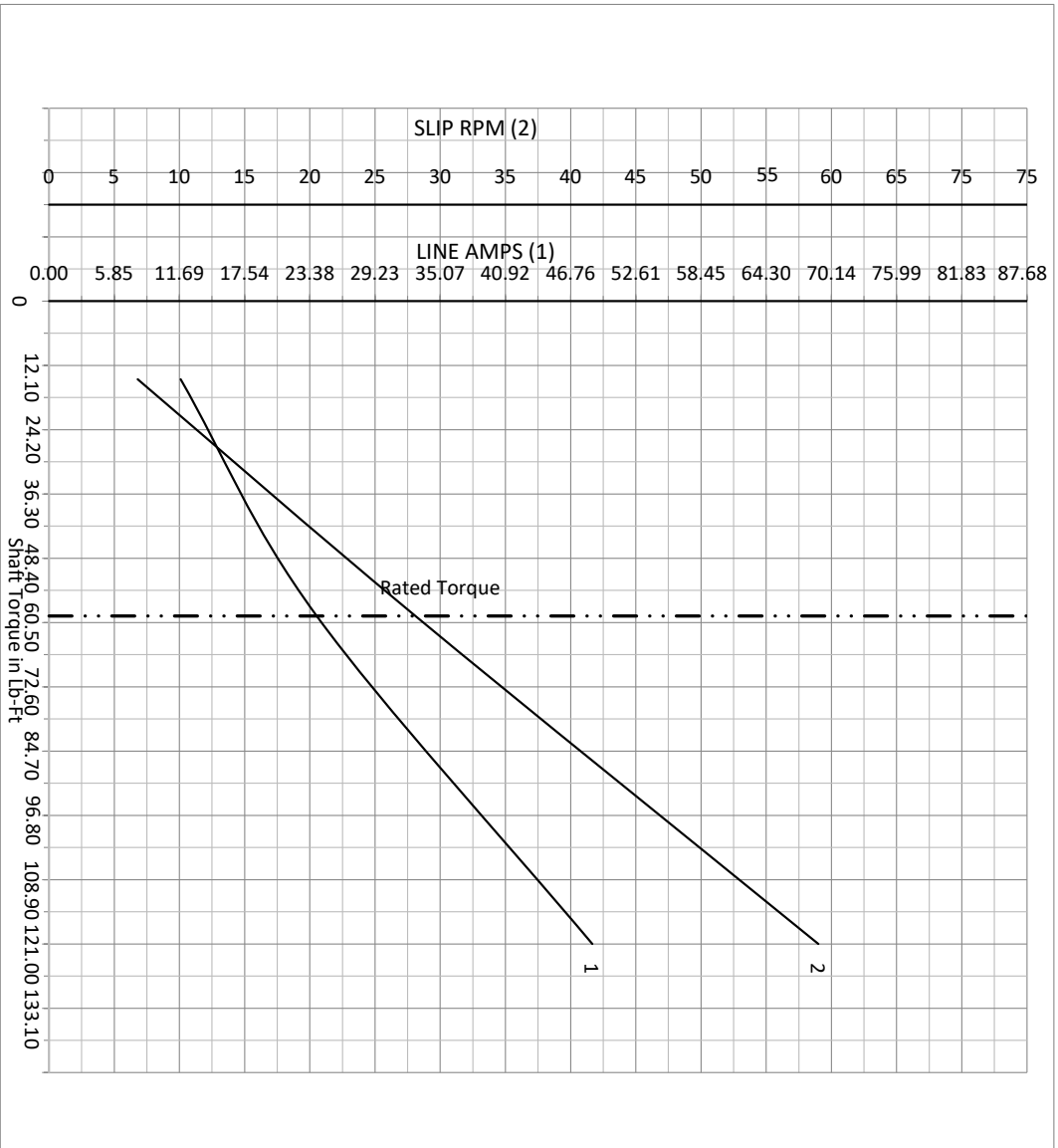
DR BY USBRRANI
CK BY
APP BY USBRRANI
DATE 11/27/2017

A-C MOTOR PERFORMANCE CURVES

09WGT459
Record: 67965

| | | | | | | | |
|------------|-------------|--------------|-------|---|-------|----|--------|
| NP VOLTS | 230/460 | MAX SAFE RPM | 2700 | WYE CONN EQ CKT OHMS PER PHASE (BASE RATING, 20C) | | | |
| NP AMPS | 48/24 | Base Volt | 460 | R1 | 0.167 | X1 | 0.876 |
| HP | 20 HP | NL AMPS | 10.40 | R2 | 0.159 | X2 | 1.160 |
| BASE SPEED | 1771.900024 | Slips(HZ) | 0.94 | | | XM | 30.000 |
| PHASE/HZ | 3/60 | WK2 () | 0.000 | | | | |

Vector PWM Inverter Duty
Variable Speed AC Motor Curves

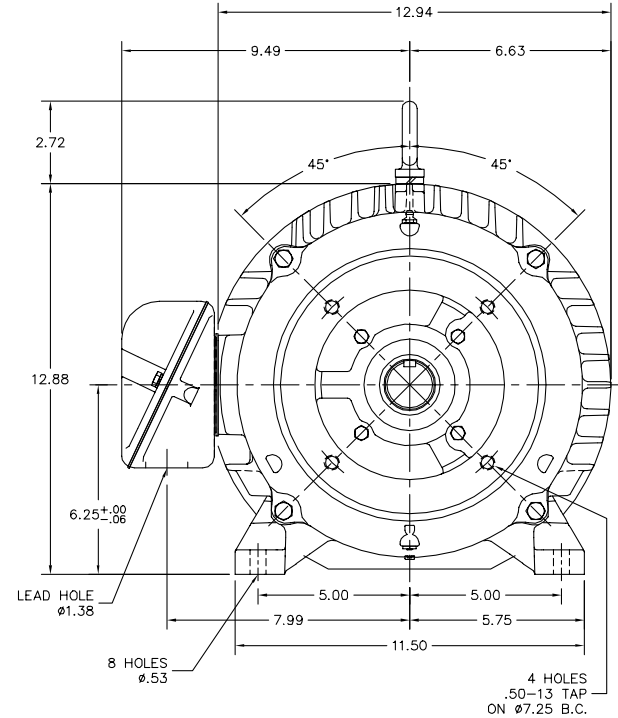
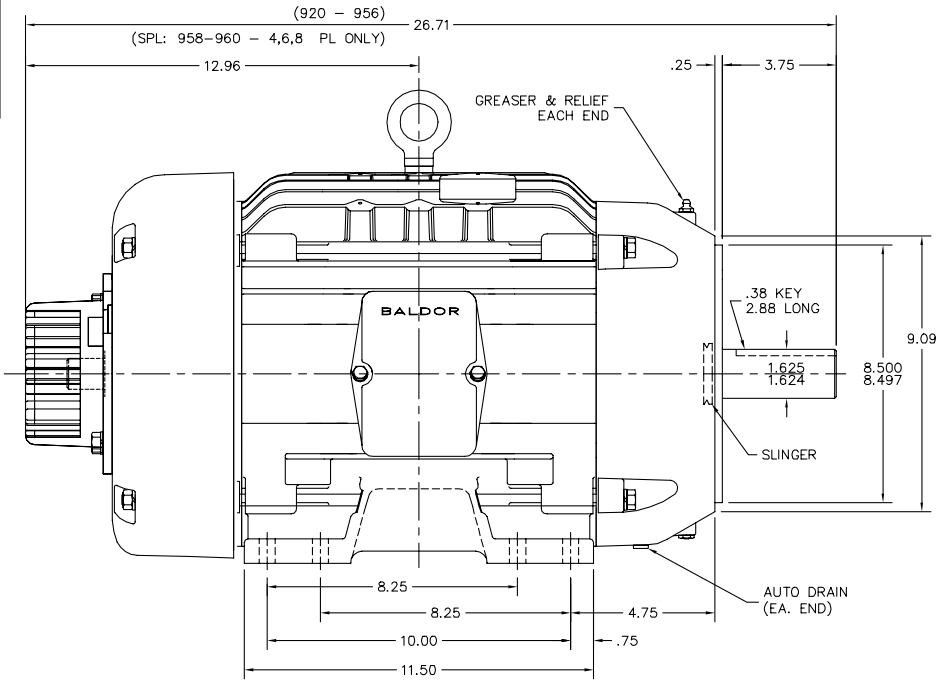


Calculated Data

Data Valid For Nameplate Speed Range only

| | | | |
|--|--------|-----------------|---|
| <p>BALDOR A MEMBER OF THE ABB GROUP</p> | DR BY | USBRRANI | <p>A-C MOTOR PERFORMANCE CURVES</p> <p>Record: 67965</p> |
| | CK BY | | |
| | APP BY | USBRRANI | |
| | DATE | 11/27/2017 | |
| | | 09WGT459 | |

09LYK146



09LYK146

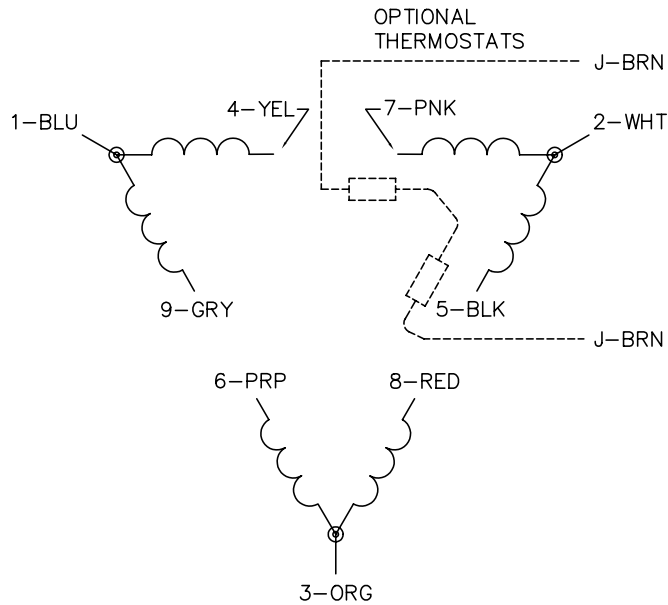
CUSTOMER IS RESPONSIBLE FOR DETERMINING THAT BALDOR'S PRODUCT WILL PERFORM SUITABLY IN THE INTENDED APPLICATION.

| | | |
|---------------------------|------------------------------|-------------------|
| REV. DESC: REMOVE LOCKNUT | VERSION: 03 | TDR: 000000955506 |
| REV. LTR: C | REVISED: 04:23:51 12/01/2015 | BY: ENMARSO |
| FILE: \AAA\00189\349 | | |
| MTL: - | | |

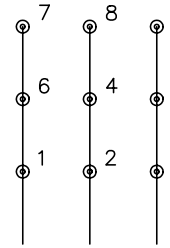
BALDOR

HOR TEFC 254-6TC INV W/THRU SH ENC PROV. & ENC COVER
SH 1 of 1

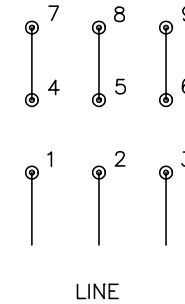
CD0180



LOW VOLTAGE
(2D)



HIGH VOLTAGE
(1D)



NOTES:

1. INTERCHANGE ANY TWO LINE LEADS TO REVERSE ROTATION.
2. OPTIONAL THERMOSTATS ARE PROVIDED WHEN SPECIFIED.
3. ACTUAL NUMBER OF INTERNAL PARALLEL CIRCUITS MAY BE A MULTIPLE OF THOSE SHOWN ABOVE.
4. LEAD COLORS ARE OPTIONAL. LEADS MUST ALWAYS BE NUMBERED AS SHOWN.

| | | | |
|---|---------|------------------------|--------------|
| REV. DESC: REVISE TO SHOW OPTIONAL COLORS | | | |
| REV. LTR: C | BY: JLP | REVISED: 01/21/99 2:28 | TDR: 0171435 |
| 0810D0 | | FILE: AAA00005148 | MDL: - |
| | | MTL: - | |

BALDOR ELECTRIC Co.

3PH, DV, 9 LEADS, DELTA CONNECTION

CD0180