ABB BALDOR RELIANCE

# Customer information packet

CFSWDM23934T-E

20HP, 1765RPM, 3PH, 60HZ, 256TC, 3960M, TEFC, F
Class - None
Division - Not Applicable

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## Specifications

| | |
|---|---|
| **Enclosure** | TEFC |
| **Frame** | 256TC |
| **Frame Material** | Stainless Steel |
| **Frequency** | 60.00 Hz |
| **Haz Area Class and Group** | None |
| **Haz Area Division** | Not Applicable |
| **Motor Letter Type** | Three Phase |
| **Output @ Frequency** | 20.000 HP @ 60 HZ |
| **Phase** | 3 |
| **Synchronous Speed @ Frequency** | 1800 RPM @ 60 HZ |
| **Voltage @ Frequency** | 230.0 V @ 60 HZ |
| | 460.0 V @ 60 HZ |
| **Agency Approvals** | UR |
| | CSA |
| | NEMA PREMIUM |
| **Ambient Temperature** | 40 °C |
| **Auxiliary Box** | NO AUXILLARY BOX |
| **Auxiliary Box Lead Termination** | None |
| **Base Indicator** | Rigid |
| **Bearing Grease Type** | Polyrex EM (-20F +300F) |
| **Blower** | None |
| **Current @ Voltage** | 48.000 A @ 230.0 V |
| | 24.000 A @ 460.0 V |
| **Design Code** | A |
| **Drip Cover** | No Drip Cover |
| **Duty Rating** | CONT |
| **Efficiency @ 100% Load** | 93.0 % |
| **Electrically Isolated Bearing** | Not Electrically Isolated |
| **Feedback Device** | NO FEEDBACK |
| **Front Face Code** | Standard |
| **Front Shaft Indicator** | None |
| **Heater Indicator** | No Heater |

## Part Detail

| | |
|---|---|
| **Revision** | S |
| **Type** | AC |
| **Mech. spec.** | 39E646 |
| **Base** | |
| **Status** | PRD/A |
| **Elec. spec.** | 39WGY400 |
| **Layout** | 39LYE646 |
| **Eff. date** | 02-10-2025 |
| **CD Diagram** | CD0180 |
| **Poles** | 04 |
| **Leads** | 9#12 |
| **Proprietary** | False |
| **Created date** | 01-30-2018 |

| | |
|---|---|
| **High Voltage Full Load Amps** | 24.0 a |
| **Insulation Class** | H |
| **Inverter Code** | Inverter Ready |
| **KVA Code** | J |
| **Lifting Lugs** | Standard Lifting Lugs |
| **Locked Bearing Indicator** | Locked Bearing |
| **Motor Lead Exit** | Ko Box |
| **Motor Lead Quantity/Wire Size** | 9 @ 12 AWG |
| **Motor Lead Termination** | Flying Leads |
| **Motor Standards** | NEMA |
| **Motor Type** | 3960M |
| **Mounting Arrangement** | F1 |
| **Number of Poles** | 4 |
| **Overall Length** | 25.18 IN |
| **Power Factor** | 84 |
| **Product Family** | WD All SS Encapsulated |
| **Pulley End Bearing Type** | Sealed Bearing |
| **Pulley Face Code** | C-Face |
| **Pulley Shaft Indicator** | Standard |
| **Rodent Screen** | None |
| **Service Factor** | 1.00 |
| **Shaft Diameter** | 1.625 IN |
| **Shaft Extension Location** | Pulley End |
| **Shaft Ground Indicator** | No Shaft Grounding |
| **Shaft Rotation** | Reversible |
| **Shaft Slinger Indicator** | No Slinger |
| **Speed** | 1765 rpm |
| **Speed Code** | Single Speed |
| **Starting Method** | Direct on line |
| **Thermal Device - Bearing** | None |
| **Thermal Device - Winding** | None |
| **Vibration Sensor Indicator** | No Vibration Sensor |
| **Winding Thermal 1** | None |
| **Winding Thermal 2** | None |

**Nameplate**

| NP4427AAA05 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CAT #** | CFSWDM23934T-E | | | **WGT** | | **LBS** | | | | | | |
| **SPEC** | 39E646Y400G2 | | | **ENCL** | TEFC | | | | | | | |
| **SER #** | | | | **CC** | 010A | **IP** | 69 | | | | | |
| **HP** | 20 | | **MAG CUR** | 19.4/9.7 | | | | | | | | |
| **VOLTS** | 230/460 | | | | | **NEMA NOM. EFF** | 93 | | | | | |
| **AMPS** | 48/24 | | | | **PF** | 84 | | | | | | |
| **RATING** | 40C AMB-CONT | | | | | | | | | | | |
| **RPM** | 1765 | | | **MAX RPM** | 2700 | | | | | | | |
| **FRAME** | 256TC | **HZ** | 60 | **CODE** | J | **CLASS** | H | | | | | |
| **SER.F.** | 1.00 | **SF AMP** | | **PH** | 3 | **DES** | A | | | | | |
| **DE** | 6309 | | **ODE** | 6309 | | | | | | | | |
| **LUBRICATION** | POLYREX EM | | | | | | | | | | | |
| **ID LOGO** | **INV TYPE:** | | **VPWM** | **CHP** | 60 | **TO** | 90 | | 1.5:1 | | | |
| **ID LOGO** | **WK2** | 2.52 | **CT** | 30 | **TO** | 60 | | 2:1 | | | | |
| **ID LOGO** | **SL HZ** | 1.2 | **VT** | 6 | **TO** | 60 | | 10:1 | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | **QR** | | |
| **YR** | | | | | | | | | | | | |

**Parts List**

| Part number | Description | Quantity |
|---|---|---|
| SA351074 | SA 39E646Y400G2 | 1.000 ea |
| RA339744 | RA 39E646Y400G2 | 1.000 ea |
| 09FN3001D01SP | EXTERNAL FAN, PLASTIC (COMES W/SCREW FRO | 1.000 ea |
| 39CB1001A01 | 39 MID-SECTION, - 3PC. BOX W/5.75-12 THD | 1.000 ea |
| RM1070A79 | O-RING, -051 VITON/FKM .070CS X 5.489ID | 1.000 ea |
| 10XN2520S10 | 1/4-20X 5/8 HEX HD CAP SS | 4.000 ea |
| HW1001S25 | WASHER, 1/4 SPLT LK, STAINLESS STEEL | 4.000 ea |
| WD1000B16 | T&B CX70TN OR L70P TERMINAL LUG | 1.000 ea |
| 10XN2520S08 | SCREW, 1/4-20 X 1/2 HHCS SS | 1.000 ea |
| 39EP1904A02 | FREP ENCL 309 BRG (STAINLESS) POLISHED | 1.000 ea |
| RM1070A80 | O-RING, VITON/FKM .070CS X 10.800ID | 1.000 ea |
| HW4600F81 | 45 X 68 X 10 LIP SEAL, GRAPHITE INFUSED | 1.000 ea |
| HW4600F80 | 45 X 62 X 4.5 AFS SEAL, GRAPHITE INFUSED | 1.000 ea |
| HW4500S33 | 1/8 NPT STAINLESS #304 SS PLUG | 4.000 ea |
| HW4500S33 | 1/8 NPT STAINLESS #304 SS PLUG | 4.000 ea |
| HW5100A11 | W3917-042 WVY WSHR (WB) | 1.000 ea |
| 39EP1905A01 | PUEP ENCL 309 BRG (STAINLESS) POLISHED | 1.000 ea |
| RM1070A80 | O-RING, VITON/FKM .070CS X 10.800ID | 1.000 ea |
| HW4600F81 | 45 X 68 X 10 LIP SEAL, GRAPHITE INFUSED | 1.000 ea |
| HW4600F80 | 45 X 62 X 4.5 AFS SEAL, GRAPHITE INFUSED | 1.000 ea |
| RM1070A78 | O-RING, -012 VITON/FKM .070CS X .364ID | 4.000 ea |
| 39FH4004A01 | 304 SS FANCOVER SPUN W/SLOTS & MTG(POLIS | 1.000 ea |
| 10XN2520FS08 | HEX HD CAP SCREW 1/4-20 X 1/2 SS FOOD SA | 3.000 ea |
| HW1001S25 | WASHER, 1/4 SPLT LK, STAINLESS STEEL | 3.000 ea |
| 39CB1500A01 | 39 LID, 3 PC. BOX STAINLESS (POLISHED) | 1.000 ea |
| RM1070A79 | O-RING, -051 VITON/FKM .070CS X 5.489ID | 1.000 ea |
| HW2502G25 | #303 SS,SQ KEY 3/8 X 2.880 | 1.000 ea |
| MJ5001A27 | 32220KN GRAY SEALER *MIN BUY 4 QTS=1GAL | 0.005 qt |
| MJ5004A93 | FOOD GRADE (H1 RATED) ANTISEIZE THRD COM | 0.005 ea |
| HA5027A09 | DRAIN KIT,(2)HA4002A03 BAGGED W/LABEL | 1.000 ea |
| MJ1000A02 | GREASE, POLYREX EM EXXON | 0.030 lb |

| | | |
|---|---|---|
| HA3105FS14 | THRUBOLT, 3/8-16 X 17.250 SS FOOD SAFE | 4.000 ea |
| HW2502F08 | KEY, 5/16 SQ X .875 303 SS | 1.000 ea |
| 51XB1214S20 | 12-14X1.25 HXWSSLD SERTYB, SS | 1.000 ea |
| WD5603A01 | KIT, CLOSED-END LEAD SPLICE (18-14GA) | 1.000 ea |
| 40PA1000 | PACKAGING GROUP | 1.000 ea |
| MN416A01 | TAG-INSTAL-MAINT no wire (2500 bx)11/25 | 1.000 ea |
| FE-0000013 | ZRTG FE ASSEMBLY | 1.000 ea |
| HA1025A03 | FELT WSH 2.1875 OD X 1.170 ID X .25 #321 | 8.000 ea |
| PE-0000003 | ZRTG PE ASSEMBLY | 1.000 ea |

**AC Induction Motor Performance Data**
Record # 69070
Typical performance - not guaranteed values

| **Winding:** 39WGY400-R001 | **Type:** 3960M | **Enclosure:** TEFC |
|---|---|---|

| **Nameplate Data** | | | | **460 V, 60 Hz: High Voltage Connection** | |
|---|---|---|---|---|---|
| **Rated Output (HP)** | | | 20 | **Full Load Torque** | 59.38 LB-FT |
| **Volts** | | | 230/460 | **Start Configuration** | direct on line |
| **Full Load Amps** | | | 48/24 | **Breakdown Torque** | 226 LB-FT |
| **R.P.M.** | | | 1765 | **Pull-up Torque** | 109 LB-FT |
| **Hz** | 60 | **Phase** | 3 | **Locked-rotor Torque** | 139 LB-FT |
| **NEMA Design Code** | A | **KVA Code** | J | **Starting Current** | 188 A |
| **Service Factor (S.F.)** | | | 1 | **No-load Current** | 9.7 A |
| **NEMA Nom. Eff.** | 93 | **Power Factor** | 84 | **Line-line Res. @ 25ºC** | 0.371 Ω |
| **Rating - Duty** | | | 40C AMB-CONT | **Temp. Rise @ Rated Load** | 92°C |
| | | | | **Locked-rotor Power Factor** | 30.4 |

**Load Characteristics 460 V, 60 Hz, 20 HP**

| **% of Rated Load** | **25** | **50** | **75** | **100** | **125** | **150** |
|---|---|---|---|---|---|---|
| **Power Factor** | 47 | 69 | 79 | 84 | 86 | 87 |
| **Efficiency** | 89.8 | 93.1 | 93.5 | 93.1 | 92.4 | 91.3 |
| **Speed** | 1792 | 1784.5 | 1776.1 | 1767.4 | 1758.1 | 1747.4 |
| **Line amperes** | 11.2 | 14.5 | 18.9 | 23.9 | 29.3 | 35.2 |

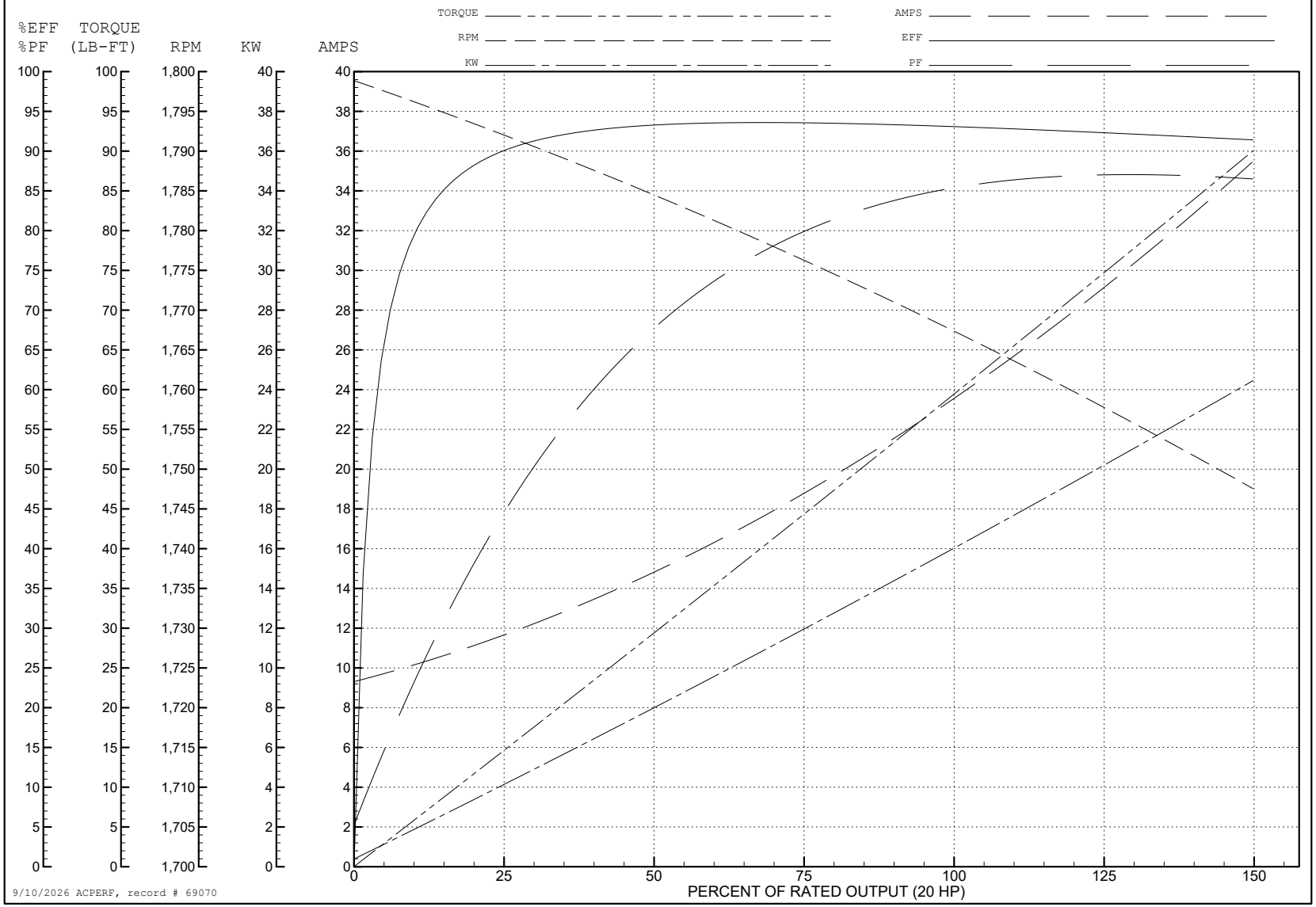
ABB Motors and Mechanical Inc.

WINDING # 39WGY400

20 HP 3 PH 60 HZ 1765 RPM 460 V 3960M

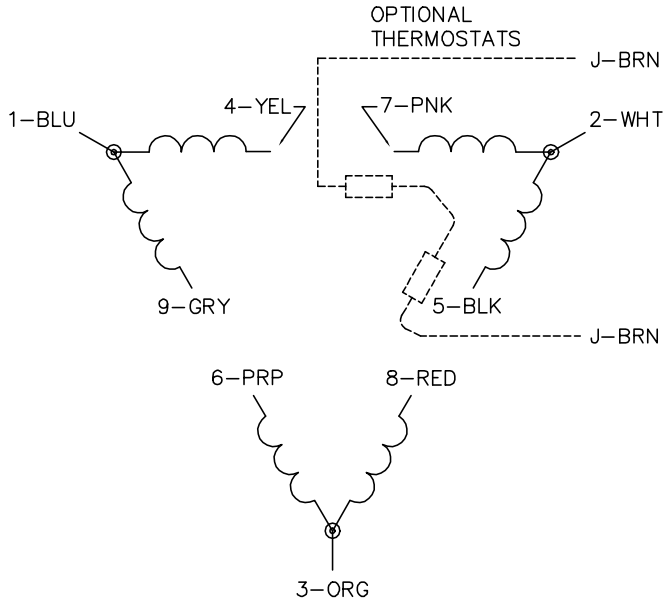
Typical performance - not guaranteed values.

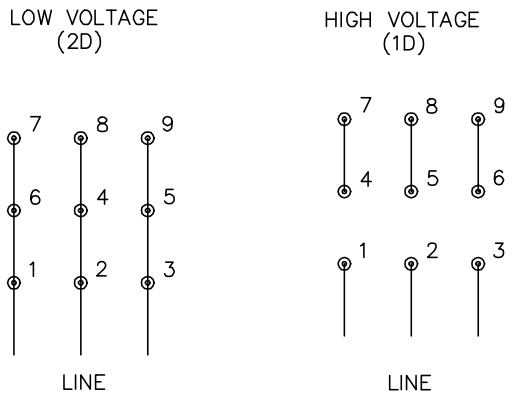
TORQUES(LB-FT): PO=226 PU=109 LR=139 LRA=188




9/10/2026 ACPERF, record # 69070

CD0180




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.

CD0180

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|---|---|---|
| REV. DESC: ADD CLASS CONN00000007 | | |
| REV. LTR: D | VERSION: 01 | TDR: 000001099922 |
| FILE: \AAA\00005\148 | REVISED: 10:25:29 02/19/2019 | BY: ENBRIR0 |
| MTL: – | | |

BALDOR - RELIANCE®

3PH, DV, 9 LEADS, DELTA CONNECTION

SH 1 of 1