

# ABB BALDOR RELIANCE III

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## Customer information packet

### EM2515T-5BG

20HP, 1765RPM, 3PH, 60HZ, 256T, 3948M, OPSB, F1

Class -

Division - Not Applicable

**Specifications**

|                                       |                           |
|---------------------------------------|---------------------------|
| <b>Enclosure</b>                      | OPSB                      |
| <b>Frame</b>                          | 256T                      |
| <b>Frame Material</b>                 | Steel                     |
| <b>Frequency</b>                      | 60.00 Hz                  |
| <b>Haz Area Division</b>              | Not Applicable            |
| <b>Motor Letter Type</b>              | Three Phase               |
| <b>Output @ Frequency</b>             | 20.000 HP @ 60 HZ         |
| <b>Phase</b>                          | 3                         |
| <b>Synchronous Speed @ Frequency</b>  | 1800 RPM @ 60 HZ          |
| <b>Voltage @ Frequency</b>            | 575.0 V @ 60 HZ           |
| <b>Agency Approvals</b>               | CSA<br>CSA EEV<br>UR      |
| <b>Ambient Temperature</b>            | 40 °C                     |
| <b>Auxiliary Box</b>                  | NO AUXILLARY BOX          |
| <b>Auxiliary Box Lead Termination</b> | None                      |
| <b>Base Indicator</b>                 | Rigid                     |
| <b>Bearing Grease Type</b>            | Polyrex EM (-20F +300F)   |
| <b>Blower</b>                         | None                      |
| <b>Current @ Voltage</b>              | 19.100 A @ 575.0 V        |
| <b>Design Code</b>                    | A                         |
| <b>Drip Cover</b>                     | No Drip Cover             |
| <b>Duty Rating</b>                    | CONT                      |
| <b>Efficiency @ 100% Load</b>         | 93.0 %                    |
| <b>Electrically Isolated Bearing</b>  | Not Electrically Isolated |
| <b>Feedback Device</b>                | NO FEEDBACK               |
| <b>Front Face Code</b>                | Standard                  |
| <b>Front Shaft Indicator</b>          | None                      |
| <b>Heater Indicator</b>               | No Heater                 |
| <b>High Voltage Full Load Amps</b>    | 19.1 a                    |
| <b>Insulation Class</b>               | H                         |
| <b>Inverter Code</b>                  | Inverter Ready            |

**Part Detail**

|                     |            |
|---------------------|------------|
| <b>Revision</b>     | R          |
| <b>Type</b>         | AC         |
| <b>Mech. spec.</b>  | 39E531     |
| <b>Base</b>         |            |
| <b>Status</b>       | PRD/A      |
| <b>Elec. spec.</b>  | 39WGX995   |
| <b>Layout</b>       | 39LYE531   |
| <b>Eff. date</b>    | 06-11-2024 |
| <b>CD Diagram</b>   | CD0006     |
| <b>Poles</b>        | 04         |
| <b>Leads</b>        | 3#12       |
| <b>Proprietary</b>  | False      |
| <b>Created date</b> | 09-08-2016 |

|                                      |                              |
|--------------------------------------|------------------------------|
| <b>KVA Code</b>                      | <b>G</b>                     |
| <b>Lifting Lugs</b>                  | <b>Standard Lifting Lugs</b> |
| <b>Locked Bearing Indicator</b>      | <b>No Locked Bearing</b>     |
| <b>Motor Lead Exit</b>               | <b>Ko Box</b>                |
| <b>Motor Lead Quantity/Wire Size</b> | <b>3 @ 12 AWG</b>            |
| <b>Motor Lead Termination</b>        | <b>Flying Leads</b>          |
| <b>Motor Standards</b>               | <b>NEMA</b>                  |
| <b>Motor Type</b>                    | <b>3948M</b>                 |
| <b>Mounting Arrangement</b>          | <b>F1</b>                    |
| <b>Number of Poles</b>               | <b>4</b>                     |
| <b>Overall Length</b>                | <b>23.19 IN</b>              |
| <b>Power Factor</b>                  | <b>85</b>                    |
| <b>Product Family</b>                | <b>General Purpose</b>       |
| <b>Pulley End Bearing Type</b>       | <b>Ball</b>                  |
| <b>Pulley Face Code</b>              | <b>Standard</b>              |
| <b>Pulley Shaft Indicator</b>        | <b>Standard</b>              |
| <b>Rodent Screen</b>                 | <b>None</b>                  |
| <b>Service Factor</b>                | <b>1.15</b>                  |
| <b>Shaft Diameter</b>                | <b>1.625 IN</b>              |
| <b>Shaft Extension Location</b>      | <b>Pulley End</b>            |
| <b>Shaft Ground Indicator</b>        | <b>Shaft Grounding</b>       |
| <b>Shaft Rotation</b>                | <b>Reversible</b>            |
| <b>Shaft Slinger Indicator</b>       | <b>No Slinger</b>            |
| <b>Speed</b>                         | <b>1765 rpm</b>              |
| <b>Speed Code</b>                    | <b>Single Speed</b>          |
| <b>Starting Method</b>               | <b>Direct on line</b>        |
| <b>Thermal Device - Bearing</b>      | <b>None</b>                  |
| <b>Thermal Device - Winding</b>      | <b>None</b>                  |
| <b>Vibration Sensor Indicator</b>    | <b>No Vibration Sensor</b>   |
| <b>Winding Thermal 1</b>             | <b>None</b>                  |
| <b>Winding Thermal 2</b>             | <b>None</b>                  |

**Nameplate**

| NP3553L                   |              |      |     |      |   |       |    |   |  |
|---------------------------|--------------|------|-----|------|---|-------|----|---|--|
| CAT.NO.                   | EM2515T-5BG  |      |     |      |   |       |    |   |  |
| SPEC                      | 39E531X995G1 |      |     |      |   |       |    |   |  |
| HP                        | 20           |      |     |      |   |       |    |   |  |
| VOLTS                     | 575          |      |     |      |   |       |    |   |  |
| AMPS                      | 19.1         |      |     |      |   |       |    |   |  |
| RPM                       | 1765         |      |     |      |   |       |    |   |  |
| FRAME                     | 256T         |      | HZ  | 60   |   |       | PH | 3 |  |
| SF                        | 1.15         | CODE | G   | DES  | A | CLASS |    | H |  |
| NEMA NOM. EFF             | 93           | PF   | 85  |      |   |       |    |   |  |
| RATING                    | 40C AMB-CONT |      |     |      |   |       |    |   |  |
| CC                        | 010A         |      |     |      |   |       |    |   |  |
| ENCL                      | OPSB         | SER  |     |      |   |       |    |   |  |
| DE                        | 6309         |      | ODE | 6208 |   |       |    |   |  |
| VPWM INVERTER READY       |              |      |     |      |   |       |    |   |  |
| CT30-60(2:1) VT3-60(20:1) |              |      |     |      |   |       |    |   |  |

**Parts List**

| Part number   | Description                              | Quantity |
|---------------|------------------------------------------|----------|
| SA326998      | SA 39E531X995G1                          | 1.000 ea |
| RA314905      | RA 39E531X995G1                          | 1.000 ea |
| HA6361A01     | LIFTING LUG FOR 37, 39 & 40 FRAME ZINC   | 2.000 ea |
| HA6016        | ADAPTER, CAST CONDUIT BOX                | 1.000 ea |
| 09CB3003      | CB W/1.75" DIA LD HL - 37, 39, 307 & 309 | 1.000 ea |
| 51XW2520A12   | .25-20 X .75, TAPTITE II, HEX WSHR SLTD  | 2.000 ea |
| WD1000B16     | T&B CX70TN OR L70P TERMINAL LUG          | 1.000 ea |
| 59XW2520G07   | .25-20X.44,HEX SER WSHR,TAPTITE 2,GREEN  | 1.000 ea |
| 39EP3200A01SP | FR/PU ENDPLATE, MACH                     | 1.000 ea |
| HW5100A08     | W3118-035 WVY WSHR (WB)                  | 1.000 ea |
| 39EP3201A22   | PU ENDPLATE, MACH                        | 1.000 ea |
| XY3816A12     | 3/8-16 FINISHED NUT W/SERRATIONS         | 8.000 ea |
| 10XN2520K28   | 1/4-20 X 1.75" HX HD SCRWGRADE 5, ZINC P | 4.000 ea |
| 09CB3501SP    | CONDUIT BOX LID FOR 09CB3001 & 09CB3002  | 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 |
| LB1508        | LABEL "SHAFT GROUNDING BRUSH" 1.50 X .81 | 1.000 ea |
| HA4051A00     | PLASTIC CAP FOR GREASE FITTING           | 1.000 ea |
| HW4500A03     | GREASE FITTING, .125 NPT 1610(ALEMITE) 8 | 1.000 ea |
| HW4500A20     | 1/8NPT SL PIPE PLUG                      | 1.000 ea |
| MJ1000A02     | GREASE, POLYREX EM EXXON                 | 0.030 lb |
| HA4051A00     | PLASTIC CAP FOR GREASE FITTING           | 1.000 ea |
| HW4500A03     | GREASE FITTING, .125 NPT 1610(ALEMITE) 8 | 1.000 ea |
| HW4500A20     | 1/8NPT SL PIPE PLUG                      | 1.000 ea |
| MG1050Y01     | CELEROL BALDOR GOLD *5 GALLON BUCKET*    | 0.050 ga |
| 85XU0407S04   | 4X1/4 U DRIVE PIN STAINLESS              | 2.000 ea |
| 39AD2002A01   | BAFFLE PLATE 39 OPEN, SLOTTED BAND MTRS  | 1.000 ea |
| 39AD2002A01   | BAFFLE PLATE 39 OPEN, SLOTTED BAND MTRS  | 1.000 ea |
| HA3154A03     | STUD, 3/8-16 X 17.75                     | 4.000 ea |
| LB1624        | COMBINED WARNING LABEL, ISO/ANSI PICTOGR | 1.000 ea |
| LC0006        | CONNECTION LABEL                         | 1.000 ea |

|          |                                          |          |
|----------|------------------------------------------|----------|
| NP3553L  | ALUM SUPER-E,VPWM INV READY,UL EV,CC,NEM | 1.000 ea |
| 39PA1000 | PACKAGING GROUP 39 PRINT                 | 1.000 ea |
| MN416A01 | TAG-INSTAL-MAINT no wire (2500 bx)11/25  | 1.000 ea |

**AC Induction Motor Performance Data**

Record # 59144

Typical performance - not guaranteed values

| Winding: 39WGX995-R002 |    |       | Type: 3948M                           |                     | Enclosure: OPSB         |                       |       |         |
|------------------------|----|-------|---------------------------------------|---------------------|-------------------------|-----------------------|-------|---------|
| Nameplate Data         |    |       | 575 V, 60 Hz:<br>Single Voltage Motor |                     |                         |                       |       |         |
| Rated Output (HP)      |    | 20    | Full Load Torque                      |                     | 59.7 LB-FT              |                       |       |         |
| Volts                  |    | 575   | Start Configuration                   |                     | direct on line          |                       |       |         |
| Full Load Amps         |    | 19.1  | Breakdown Torque                      |                     | 189 LB-FT               |                       |       |         |
| R.P.M.                 |    | 1765  | Pull-up Torque                        |                     | 78.9 LB-FT              |                       |       |         |
| Hz                     | 60 | Phase | 3                                     | Locked-rotor Torque |                         | 113 LB-FT             |       |         |
| NEMA Design Code       |    | A     | KVA Code                              | G                   | Starting Current        |                       | 126 A |         |
| Service Factor (S.F.)  |    | 1.15  | No-load Current                       |                     | 7.18 A                  |                       |       |         |
| NEMA Nom. Eff.         |    | 93    | Power Factor                          |                     | 85                      | Line-line Res. @ 25°C |       | 0.711 Ω |
| Rating - Duty          |    | 40C   | AMB-CONT                              |                     | Temp. Rise @ Rated Load |                       | 37°C  |         |
| S.F. Amps              |    |       | Temp. Rise @ S.F. Load                |                     | 46°C                    |                       |       |         |
|                        |    |       | Locked-rotor Power Factor             |                     | 33.3                    |                       |       |         |
|                        |    |       | Rotor inertia                         |                     | 2.1 LB-FT2              |                       |       |         |

**Load Characteristics 575 V, 60 Hz, 20 HP**

| % of Rated Load | 25   | 50   | 75   | 100  | 125  | 150  | S.F. |
|-----------------|------|------|------|------|------|------|------|
| Power Factor    | 49   | 72   | 81   | 85   | 86   | 87   | 86   |
| Efficiency      | 90.2 | 93.1 | 93.4 | 93.1 | 92.1 | 91   | 92.5 |
| Speed           | 1792 | 1785 | 1776 | 1768 | 1758 | 1747 | 1762 |
| Line amperes    | 8.49 | 11.3 | 14.9 | 19.1 | 23.6 | 28.5 | 21.8 |

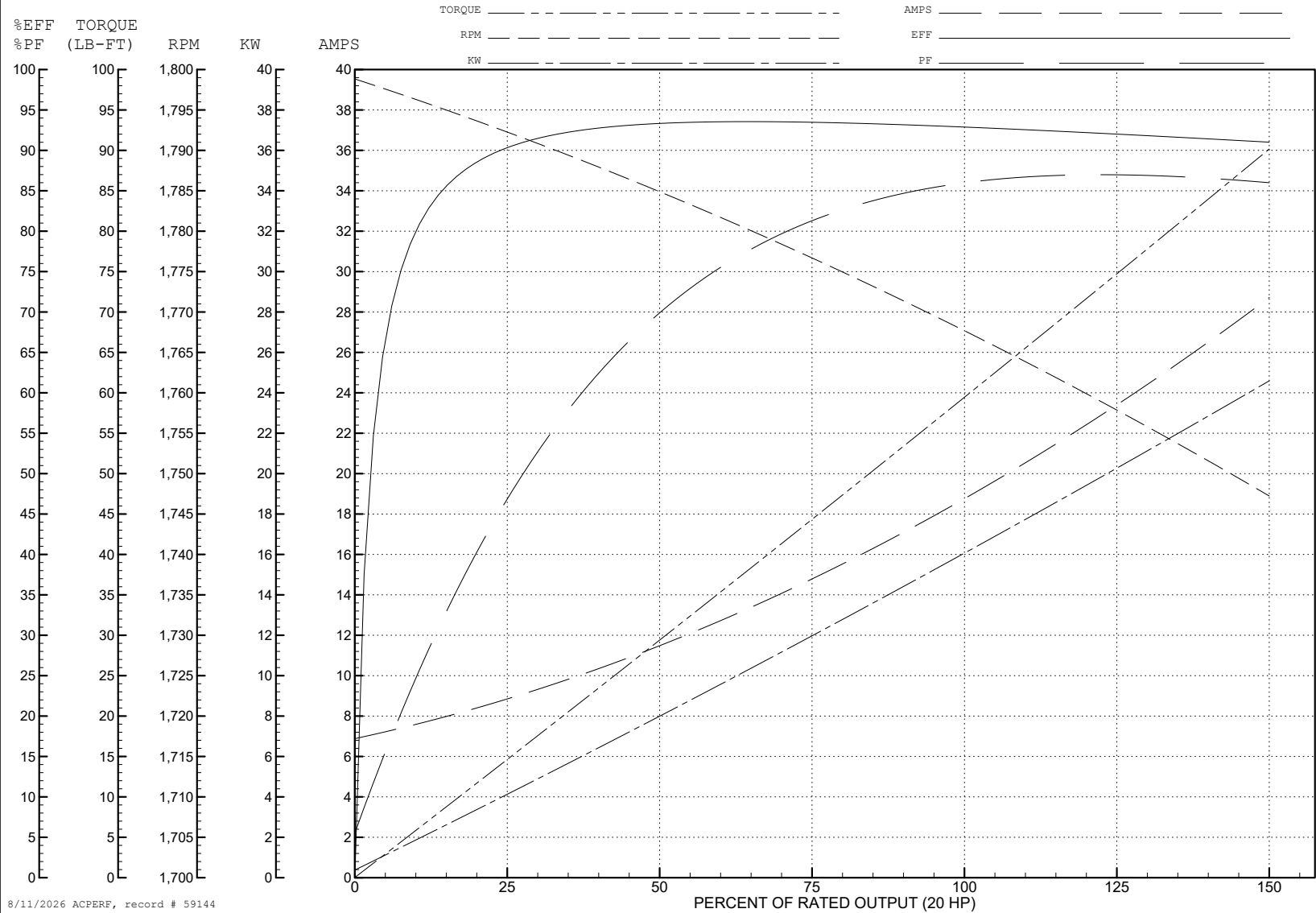
ABB Motors and Mechanical Inc.

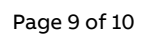
WINDING # 39WGX995

Typical performance - not guaranteed values.

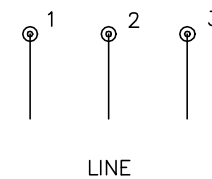
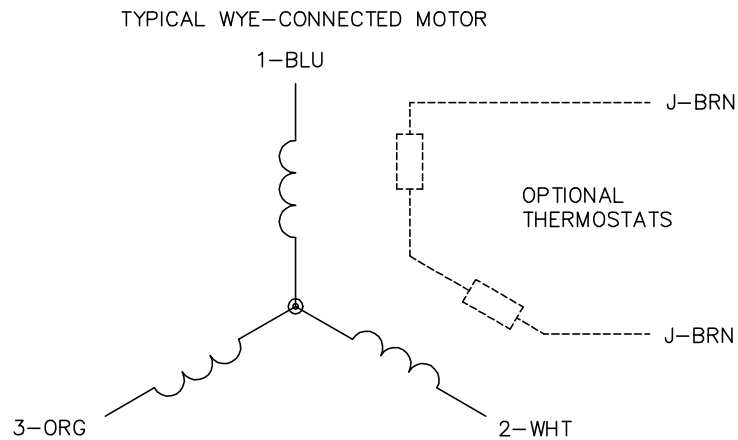
20 HP 3 PH 60 HZ 1765 RPM 575 V 3948M

TORQUES (LB-FT): PO=189 PU=78.9 LR=113 LRA=126





CD0006


**NOTES:**

1. THREE LEAD MOTOR MAY BE EITHER WYE CONNECTED OR DELTA CONNECTED.
2. INTERCHANGE ANY TWO LINE LEADS TO REVERSE ROTATION.
3. OPTIONAL THERMOSTATS ARE PROVIDED WHEN SPECIFIED.
4. ACTUAL NUMBER OF INTERNAL PARALLEL CIRCUITS MAY VARY.
5. LEAD COLORS ARE OPTIONAL. LEADS MUST BE NUMBERED AS SHOWN.

CD0006

REV. DESC: ADD CLASS CONN00000007

REV. LTR: E

VERSION: 01

TDR: 000001099922

FILE: \AAA\00005\141

REVISED: 10: 24: 49 02/19/2019

BY: ENBRIRO

MTL: -


**BALDOR - RELIANCE®**

3PH, SV, 3 LEADS, WYE OR DELTA CONNECTED

SH 1 of 1