

# ABB BALDOR RELIANCE III

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## Customer information packet

### CECP2334T

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

Class - CLI GP A,B,C,D

Division - Division II

**Specifications**

|                                       |                                                                |
|---------------------------------------|----------------------------------------------------------------|
| <b>Enclosure</b>                      | TEFC                                                           |
| <b>Frame</b>                          | 256TC                                                          |
| <b>Frame Material</b>                 | Iron                                                           |
| <b>Frequency</b>                      | 60.00 Hz                                                       |
| <b>Haz Area Class and Group</b>       | CLI GP A,B,C,D                                                 |
| <b>Haz Area Division</b>              | Division II                                                    |
| <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>            | 460.0 V @ 60 HZ<br>230.0 V @ 60 HZ                             |
| <b>Agency Approvals</b>               | CCSA US<br>CSA EEV<br>NEMA PREMIUM<br>NEMA_PREMIUM<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>Constant Torque Speed Range</b>    | 1.0                                                            |
| <b>Current @ Voltage</b>              | 52.000 A @ 208.0 V<br>48.000 A @ 230.0 V<br>24.000 A @ 460.0 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                                      |

**Part Detail**

|                     |            |
|---------------------|------------|
| <b>Revision</b>     | M          |
| <b>Type</b>         | AC         |
| <b>Mech. spec.</b>  | 09H180     |
| <b>Base</b>         |            |
| <b>Status</b>       | PRD/A      |
| <b>Elec. spec.</b>  | 09WGT459   |
| <b>Layout</b>       | 09LYH180   |
| <b>Eff. date</b>    | 09-16-2025 |
| <b>CD Diagram</b>   | CD0180     |
| <b>Poles</b>        | 04         |
| <b>Leads</b>        | 9#10       |
| <b>Proprietary</b>  | False      |
| <b>Created date</b> | 11-20-2017 |

|                                      |                                    |
|--------------------------------------|------------------------------------|
| <b>Feedback Device</b>               | <b>NO FEEDBACK</b>                 |
| <b>Front Face Code</b>               | <b>Standard</b>                    |
| <b>Front Shaft Indicator</b>         | <b>None</b>                        |
| <b>Haz Area Temp Code</b>            | <b>T3C</b>                         |
| <b>Heater Indicator</b>              | <b>No Heater</b>                   |
| <b>High Voltage Full Load Amps</b>   | <b>24.0 a</b>                      |
| <b>Insulation Class</b>              | <b>F</b>                           |
| <b>Inverter Code</b>                 | <b>Inverter Duty</b>               |
| <b>KVA Code</b>                      | <b>J</b>                           |
| <b>Lifting Lugs</b>                  | <b>Standard Lifting Lugs</b>       |
| <b>Locked Bearing Indicator</b>      | <b>Locked Bearing</b>              |
| <b>Max Speed</b>                     | <b>2700 rpm</b>                    |
| <b>Motor Lead Exit</b>               | <b>Ko Box</b>                      |
| <b>Motor Lead Quantity/Wire Size</b> | <b>9 @ 10 AWG</b>                  |
| <b>Motor Lead Termination</b>        | <b>Flying Leads</b>                |
| <b>Motor Standards</b>               | <b>NEMA</b>                        |
| <b>Motor Type</b>                    | <b>0960M</b>                       |
| <b>Mounting Arrangement</b>          | <b>F1</b>                          |
| <b>Number of Poles</b>               | <b>4</b>                           |
| <b>Overall Length</b>                | <b>25.28 IN</b>                    |
| <b>Power Factor</b>                  | <b>83</b>                          |
| <b>Product Family</b>                | <b>Super-E Chemical Processing</b> |
| <b>Pulley End Bearing Type</b>       | <b>Ball</b>                        |
| <b>Pulley Face Code</b>              | <b>C-Face</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>No Shaft Grounding</b>          |
| <b>Shaft Rotation</b>                | <b>Reversible</b>                  |
| <b>Shaft Slinger Indicator</b>       | <b>Shaft Slinger</b>               |
| <b>Speed</b>                         | <b>1770 rpm</b>                    |
| <b>Speed Code</b>                    | <b>Single Speed</b>                |

|                            |                     |
|----------------------------|---------------------|
| 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**
**NP3995ABEL**

|                           |       |                           |       |         |                  |                       |             |              |                |             |        |      |        |               |   |
|---------------------------|-------|---------------------------|-------|---------|------------------|-----------------------|-------------|--------------|----------------|-------------|--------|------|--------|---------------|---|
| CAT #                     |       | CECP2334T                 |       |         |                  | SER                   |             |              |                | CC          |        | 010A |        |               |   |
| SPEC                      |       | 09H180T459G1              |       |         |                  | RATING                |             | 40C AMB-CONT |                |             |        |      |        |               |   |
| HZ                        |       | VOLTS                     |       | AMPS    |                  | RPM                   |             | HP           | CODE           |             | SF     | DES  | PF     | NEMA NOM. EFF |   |
| 60                        |       | 230/460                   |       | 48/24   |                  | 1770                  |             | 20           | J              |             | 1.15   | A    | 83 %   | 93 %          | % |
|                           |       |                           |       |         |                  |                       |             |              |                |             |        |      | %      |               | % |
| PH                        | 3     | CL                        | F     | MAX RPM | 2700             | MAX CORR KVAR         |             | 5.35         | USABLE AT 208V |             |        |      | N/A    |               |   |
| IP55                      |       | FR                        | 256TC | ENCL    |                  | TEFC                  | DE BRG      | 6309         | ODE BRG        |             | 6309   |      |        |               |   |
| GREASE                    |       | POLYREX EM                |       |         |                  |                       |             |              |                | MTR WT      | 339    | LBS  |        |               |   |
| USABLE AT                 |       | 50HZ 15HP 190/380V 44/22A |       |         |                  |                       |             |              |                | SF1.0       |        |      |        |               |   |
|                           |       |                           |       |         |                  |                       |             |              |                |             |        |      |        |               |   |
|                           |       |                           |       |         |                  |                       |             |              |                |             |        |      |        |               |   |
| CL I DIV 2 GRPS A,B,C,D   |       |                           |       |         | CL I ZONE 2 GRPS |                       |             |              |                | IIA,IIB,IIC |        |      | TEMP T | 160           | C |
| 1.0 SF ON PWM INVERTER    |       |                           |       |         | POWER            |                       | INV TEMP CL |              | 180            | C           |        |      |        |               |   |
| CHP                       | 60-90 | HZ                        | 1.5:1 | CT      | 1.0-60           | HZ                    | 60:1        | VT           | 0-60           | HZ          | 1000:1 |      |        |               |   |
| SPACE HEATER LEADS H1-H2: |       |                           |       |         | TIE LIKE NUMBERS |                       |             |              |                | TOGETHER    |        |      |        |               |   |
| V                         |       | A                         |       | W       |                  | MAX SPACE HEATER TEMP |             |              |                |             |        |      |        |               |   |

**AC Induction Motor Performance Data**

Record # 68075

Typical performance - not guaranteed values

| Winding: 09WGT459-R011 |    |         | Type: 0960M                              |                     | Enclosure: TEFC         |                       |       |           |
|------------------------|----|---------|------------------------------------------|---------------------|-------------------------|-----------------------|-------|-----------|
| Nameplate Data         |    |         | 460 V, 60 Hz:<br>High Voltage Connection |                     |                         |                       |       |           |
| Rated Output (HP)      |    | 20      | Full Load Torque                         |                     | 59.27 LB-FT             |                       |       |           |
| Volts                  |    | 230/460 | Start Configuration                      |                     | direct on line          |                       |       |           |
| Full Load Amps         |    | 48/24   | Breakdown Torque                         |                     | 232 LB-FT               |                       |       |           |
| R.P.M.                 |    | 1770    | Pull-up Torque                           |                     | 126 LB-FT               |                       |       |           |
| Hz                     | 60 | Phase   | 3                                        | Locked-rotor Torque |                         | 141 LB-FT             |       |           |
| NEMA Design Code       |    | A       | KVA Code                                 | J                   | Starting Current        |                       | 198 A |           |
| Service Factor (S.F.)  |    | 1.15    | No-load Current                          |                     | 10.4 A                  |                       |       |           |
| NEMA Nom. Eff.         |    | 93      | Power Factor                             |                     | 83                      | Line-line Res. @ 25°C |       | 0.33814 Ω |
| Rating - Duty          |    | 40C     | AMB-CONT                                 |                     | Temp. Rise @ Rated Load |                       | 58°C  |           |
| S.F. Amps              |    |         | Temp. Rise @ S.F. Load                   |                     | 70°C                    |                       |       |           |
|                        |    |         | Locked-rotor Power Factor                |                     | 26.5                    |                       |       |           |

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

| % of Rated Load | 25     | 50     | 75     | 100    | 125    | 150    | S.F. |
|-----------------|--------|--------|--------|--------|--------|--------|------|
| Power Factor    | 45     | 67     | 78     | 83     | 86     | 87     | 85   |
| Efficiency      | 89.2   | 93     | 93.7   | 93.6   | 93.1   | 92.4   | 93.3 |
| Speed           | 1793.2 | 1786.4 | 1779.1 | 1771.9 | 1763.7 | 1755.3 | 1767 |
| Line amperes    | 11.8   | 15     | 19.2   | 24     | 29.3   | 34.9   | 27.2 |

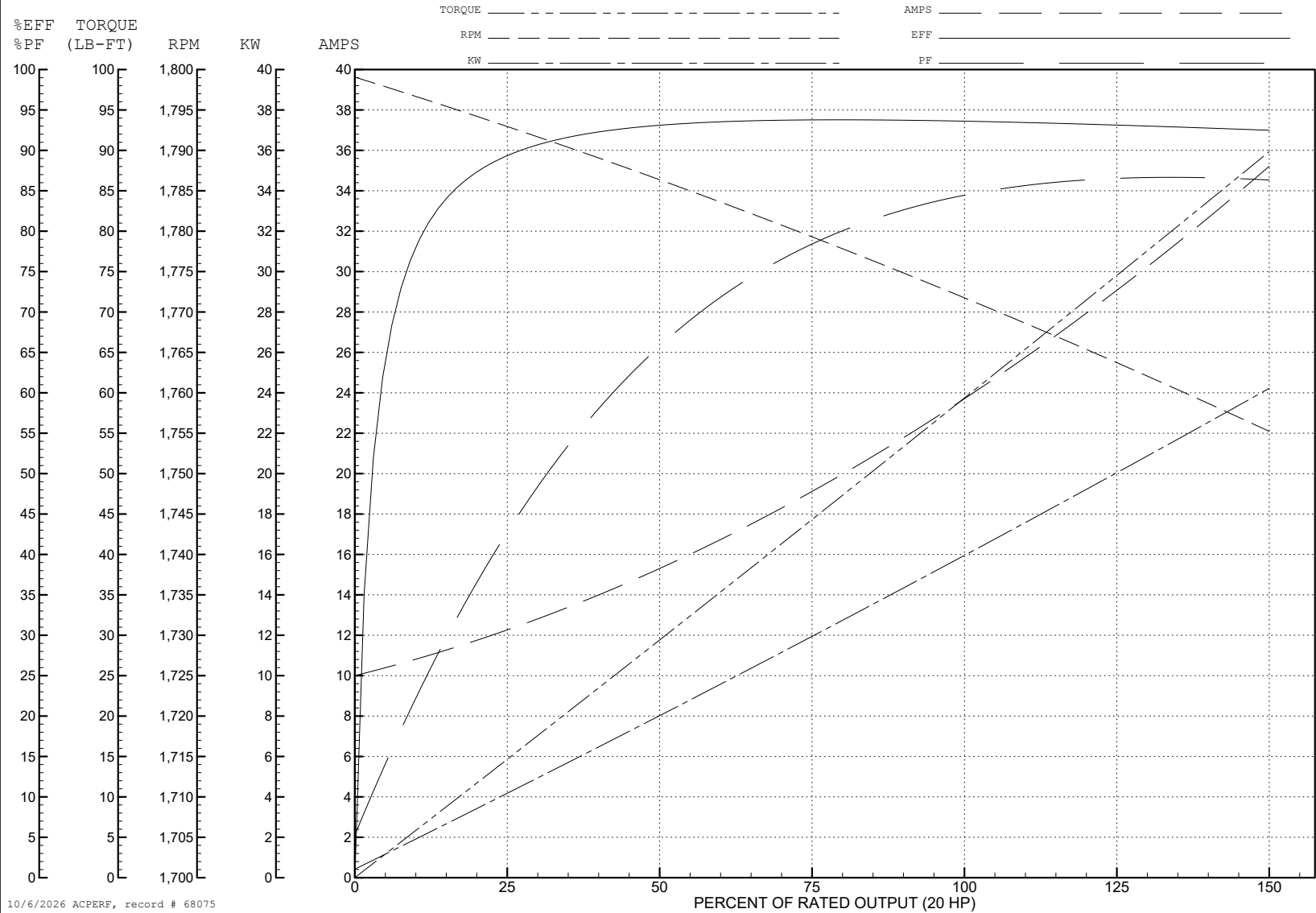
ABB Motors and Mechanical Inc.

WINDING # 09WGT459

Typical performance - not guaranteed values.

20 HP 3 PH 60 HZ 1770 RPM 460 V 0960M

TORQUES (LB-FT): PO=232 PU=126 LR=141 LRA=198



**AC Induction Motor Performance Data**

Record # 114686

Typical performance - not guaranteed values

| Winding: 09WGT459-RXXX |    |              | Type: 0960M                              |                           | Enclosure: TEFC |             |
|------------------------|----|--------------|------------------------------------------|---------------------------|-----------------|-------------|
| Nameplate Data         |    |              | 400 V, 60 Hz:<br>High Voltage Connection |                           |                 |             |
| Rated Output (HP)      |    | 15           | Full Load Torque                         |                           | 44.44 LB-FT     |             |
| Volts                  |    | 200/400      | Start Configuration                      |                           | direct on line  |             |
| Full Load Amps         |    | 40.6/20.3    | Breakdown Torque                         |                           | 172 LB-FT       |             |
| R.P.M.                 |    | 1770         | Pull-up Torque                           |                           | 91 LB-FT        |             |
| Hz                     | 60 | Phase        | 3                                        | Locked-rotor Torque       |                 | 102 LB-FT   |
| NEMA Design Code       |    | A            | KVA Code                                 |                           | J               |             |
| Service Factor (S.F.)  |    | 1.15         | Starting Current                         |                           | 168 A           |             |
| NEMA Nom. Eff.         |    | 92.4         | Power Factor                             |                           | 83              |             |
| Rating - Duty          |    | 50C AMB-CONT |                                          | Temp. Rise @ Rated Load   |                 | 43°C        |
| S.F. Amps              |    |              |                                          | Temp. Rise @ S.F. Load    |                 | 51°C        |
|                        |    |              |                                          | Locked-rotor Power Factor |                 | 27          |
|                        |    |              |                                          | Rotor inertia             |                 | 2.65 lb-ft² |

**Load Characteristics 400 V, 60 Hz, 15 HP**

| % of Rated Load | 25   | 50    | 75    | 100   | 125   | 150  | S.F. |
|-----------------|------|-------|-------|-------|-------|------|------|
| Power Factor    | 49   | 70    | 80    | 85    | 87    | 88   | 86   |
| Efficiency      | 88.6 | 92.6  | 93.5  | 93.5  | 93    | 92.4 | 93.2 |
| Speed           | 1793 | 1787  | 1779  | 1772  | 1764  | 1756 | 1767 |
| Line amperes    | 9.41 | 12.38 | 16.14 | 20.34 | 24.94 | 29.8 | 23.1 |

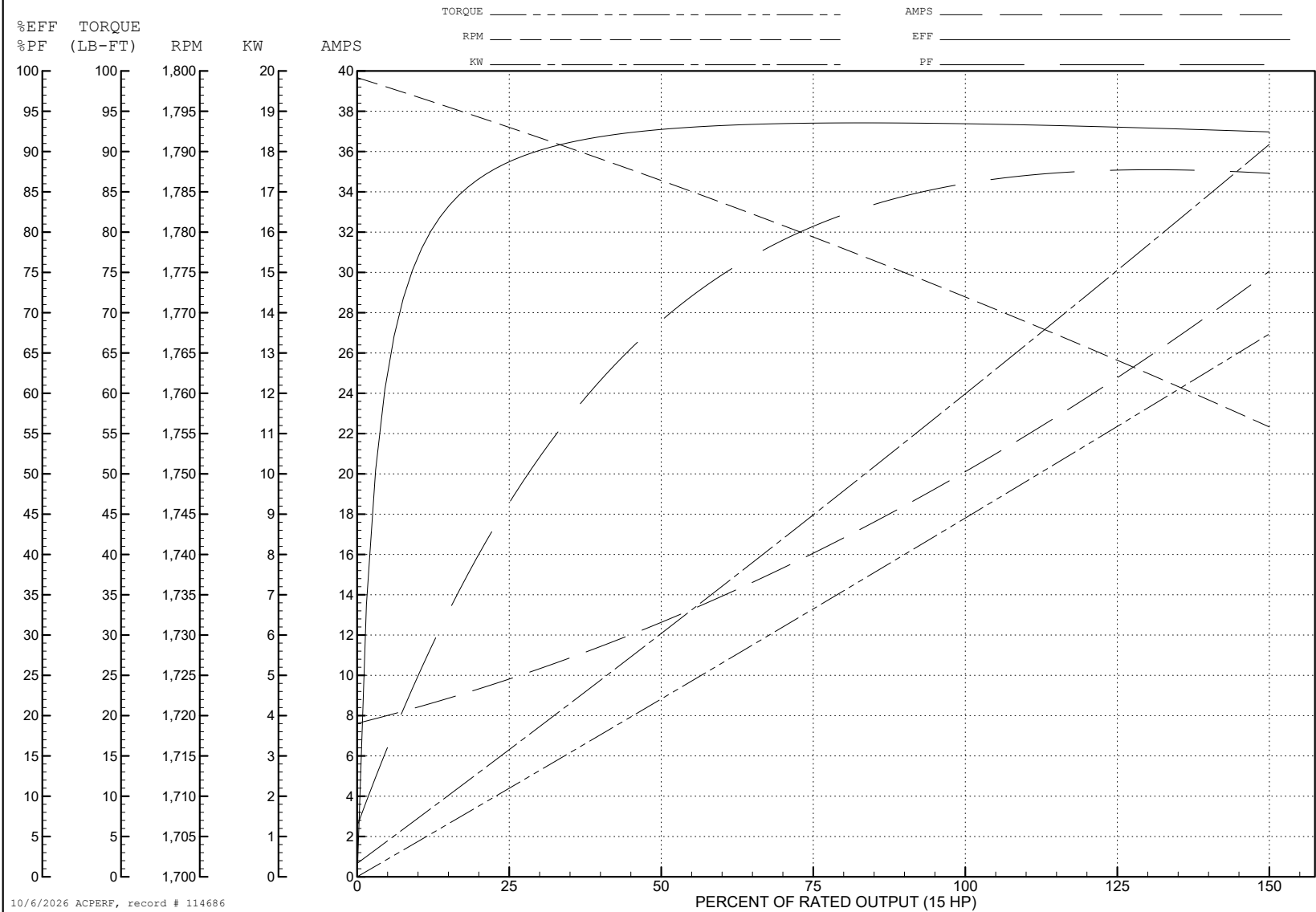
ABB Motors and Mechanical Inc.

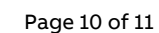
WINDING # 09WGT459

Typical performance - not guaranteed values.

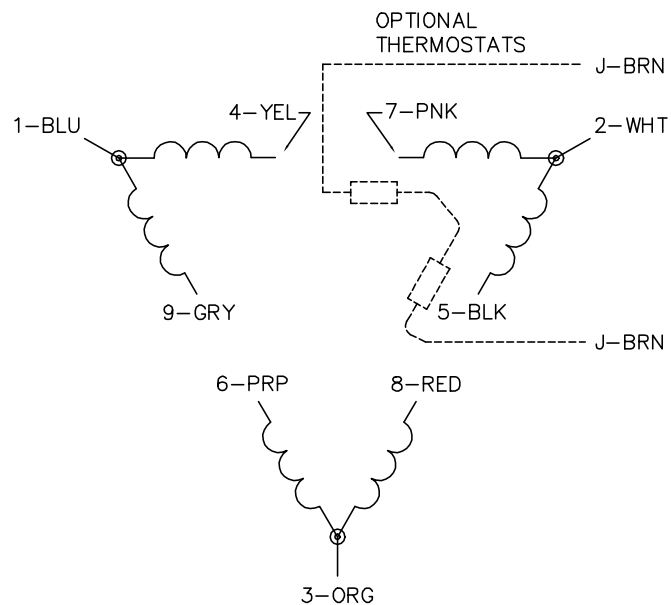
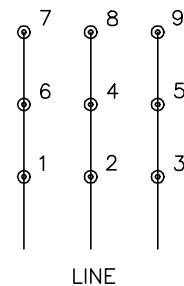
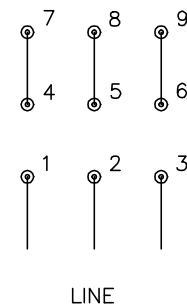
15 HP 3 PH 60 HZ 1770 RPM 400 V 0960M

TORQUES (LB-FT): PO=172 PU=91 LR=102 LRA=168





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.

CD0180

REV. DESC: ADD CLASS CONN00000007

REV. LTR: D

VERSION: 01

TDR: 000001099922

FILE: \AAA\00005\148

REVISED: 10: 25: 29 02/19/2019

BY: ENBRIRO

MTL: -


**BALDOR - RELIANCE®**

3PH, DV, 9 LEADS, DELTA CONNECTION

SH 1 of 1